Welcome!

This is the seventh in a series of teaching aids designed **by** teachers **for** teachers at level 4.
The worksheets are designed to support the delivery of the National Curriculum in a variety of teaching and learning styles. They are not designed to take the pedagogy away from the teacher.
The worksheets are centred around the shown level, but spiral from the level below to the level above. Consult the National Numeracy Strategy for definitive National Curriculum levels.
They can be used by parents with the support of the on-line help facility at www.10ticks.co.uk.

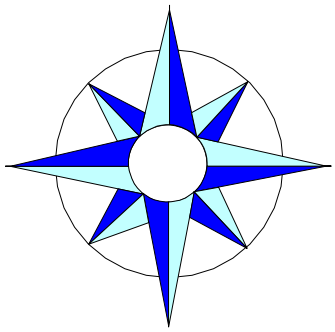
Contents and Teacher Notes.

Compass Points in the Classroom.

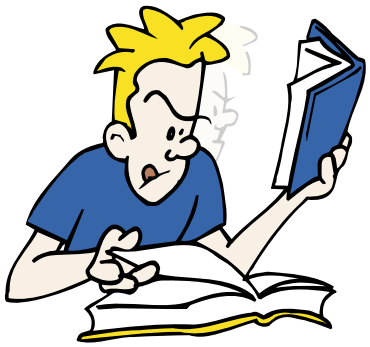
Here is the seating plan of a classroom, it is not finished.

	John			
			Jean	
	Karl			
				Richard

N



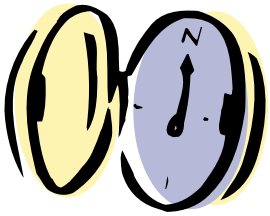
Copy the seating plan above and complete it using the clues below.



1). Dale is 1 seat North of Richard.
2). Gemma is 1 seat South West of Jean.
3). James is 2 seats East of John.
4). Alex is 2 seats South East of John.
5). Anne is 1 seat South East of Karl.
6). Jim is 3 seats South West of James.
7). Keith is West of Jean and North West of Richard.
8). Ron is South West of John and North West of Karl.
9). Val is 3 seats West of Alex.
10). Martin is North East of Val and North of Anne.
11). Wayne is 1 seat South West of Dale.
12). Rosie looks North East and can see Gemma, Jean and Sally.
13). Beth looks East and sees Keith, Jean and Lynne.
14). Sue is 3 seats North West of Wayne.

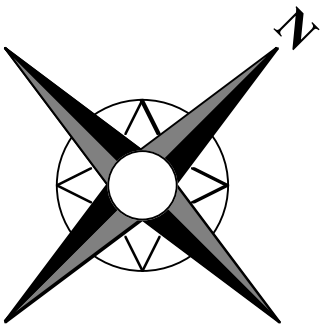
Your seating plan should now be complete.
Now answer these questions from it.

15). If James looks West, which girl can he see?
16). Lynne looks at Anne. Which direction is Lynne facing ?
17). Dale looks North West. Who can he see ?
18). Sue looks at Gemma. Which direction is Sue facing ?
19). Write down the direction and number of seats Karl must go to get to James.
20). Write down the direction and number of seats Wayne must go to get to Beth.



Here is the seating plan of another classroom, it also is not finished.
Notice the compass has been turned around.

				Amy
	Katie			
			Amar	
		Austin		



Copy the seating plan and complete it using the clues below.

1). Lee is 3 seats South West of Amar.
2). Ben is North of Austin.
3). Ria is South East of Katie and South West of Austin.
4). David is 1 seat West of Katie.
5). Adam is 2 seats North West of Amar.
6). Carla is 2 seats South of Amy.
7). Nicola is 3 seats North West of Austin.
8). Paul is South West of Amy and West of Amar.
9). Richard is 2 seats North East of Katie.
10). Shaun is West of Austin and South West of Amar.
11). Clare looks North and sees Shaun, Lisa and Adam.
12). Lucy is 2 seats North East of Carla.
13). Amy looks South East and sees Ben, Lucy and Craig.
14). Amanda is 3 seats East of David.
15). When Tayo looks North East, the boys he sees are Richard and Ben.

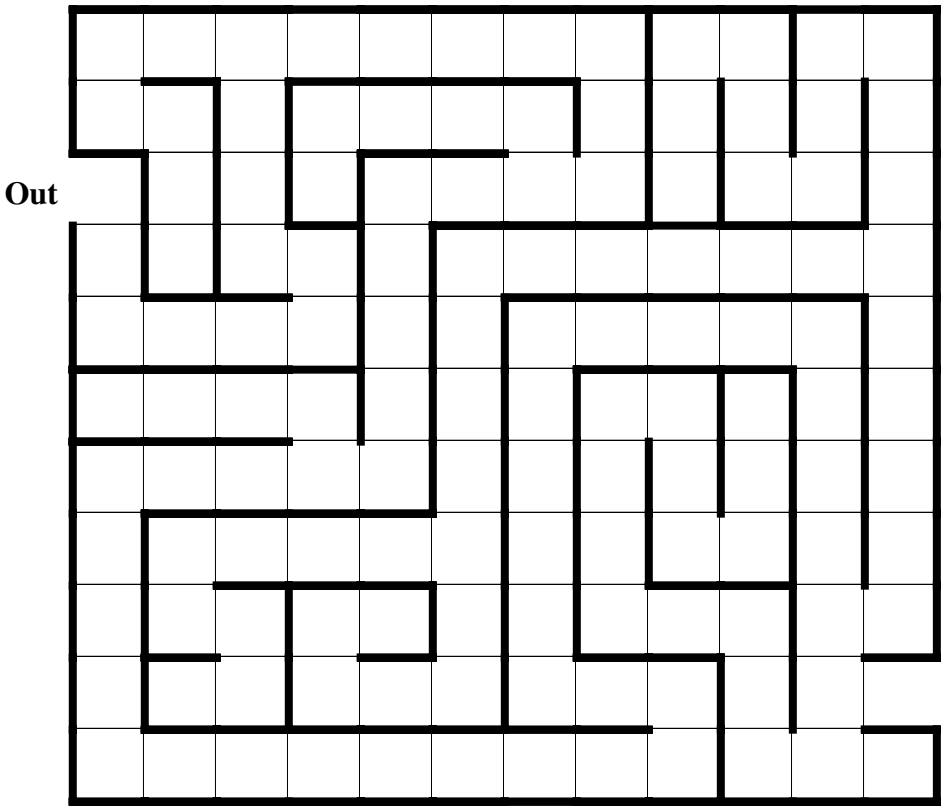
Your seating plan should now be complete.
Now answer these questions from it.

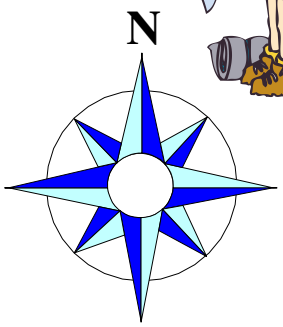
16). If Carla looks West, which boy can she see?
17). Amanda looks at Ria. Which direction is Amanda facing ?
18). Clare looks North West. Who can she see ?
19). Paul looks at Shaun. Which direction is Paul facing ?
20). Write down the direction and number of seats Nicola must go to get to Lucy.
21). Write down the direction and number of seats Amanda must go to get to David.

Mazes and Compass Points 1.

Jenny has been blind-folded and put at the entrance of a maze.
She knows her compass directions and the number of squares she passes.
Copy and fill in the table showing how to get her through each maze.

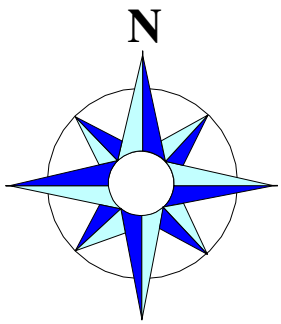
1).



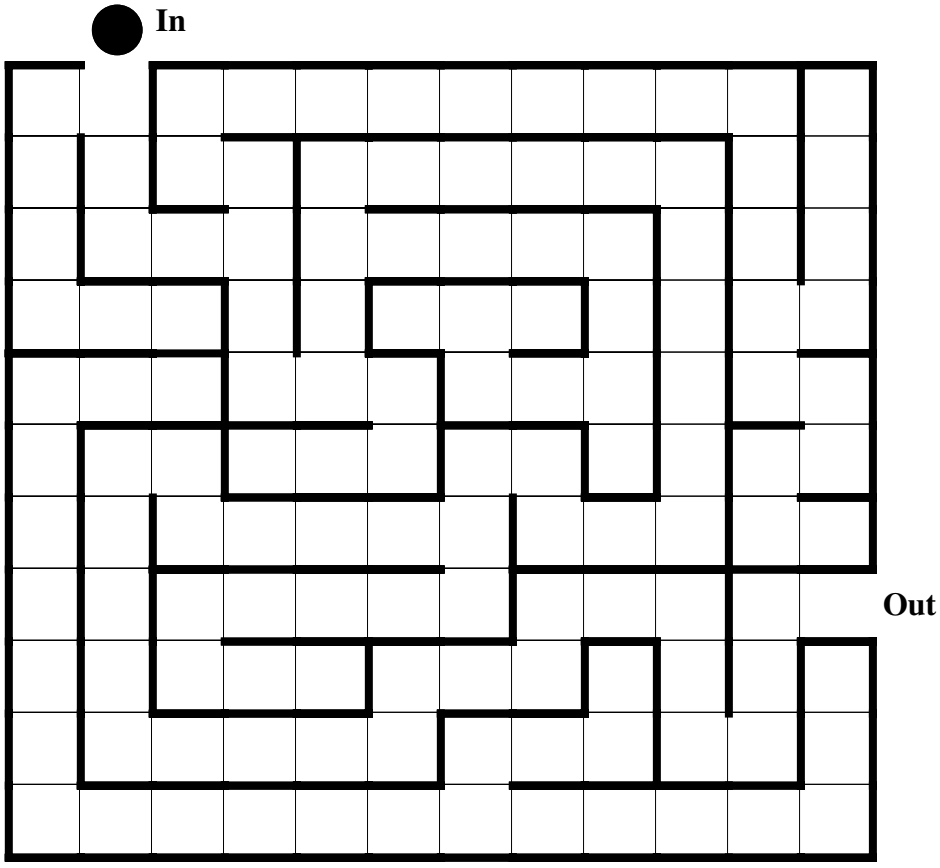


Direction	Number of Squares
West	2

2).

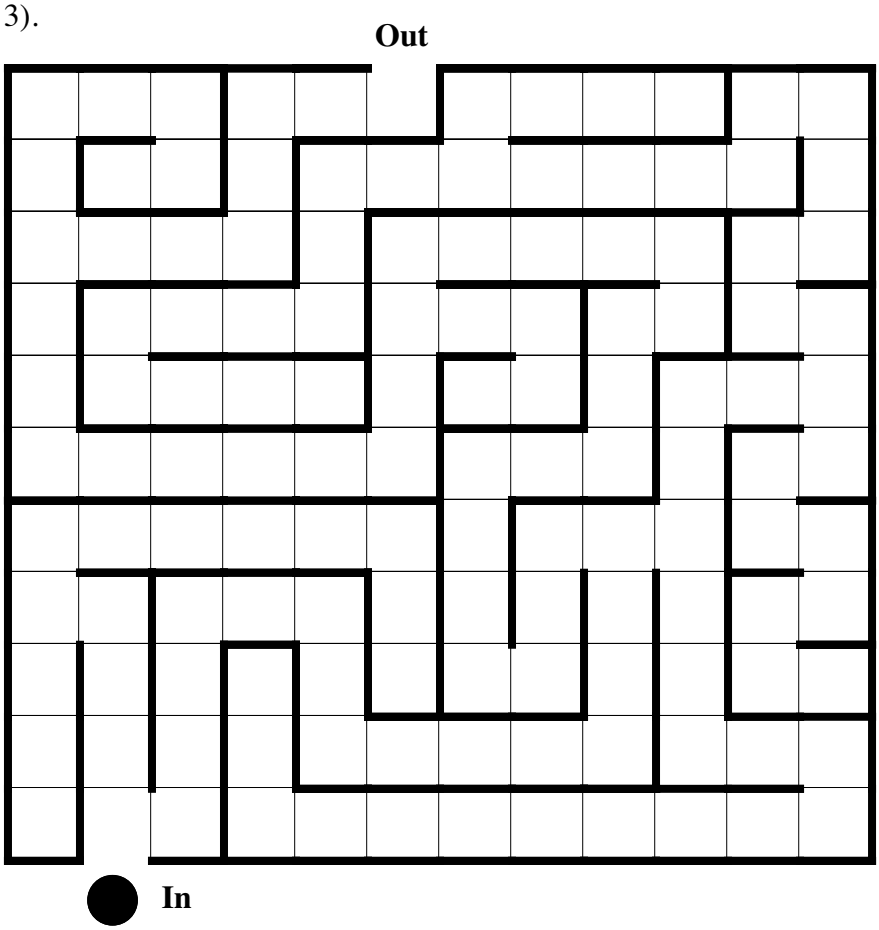


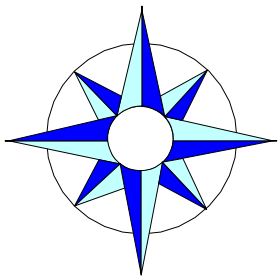
Direction	Number of Squares



Notice the compass has been turned around.

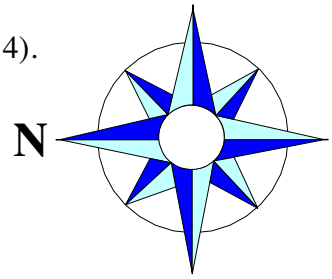
3).

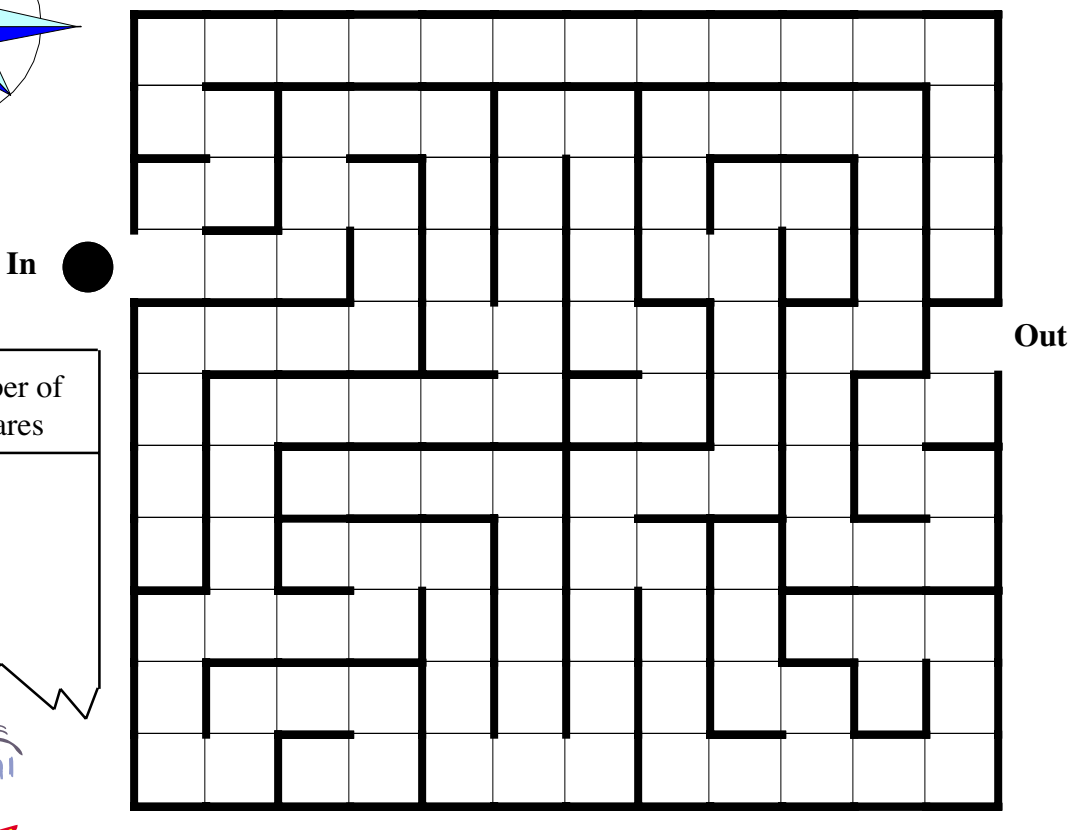




Direction	Number of Squares

4).



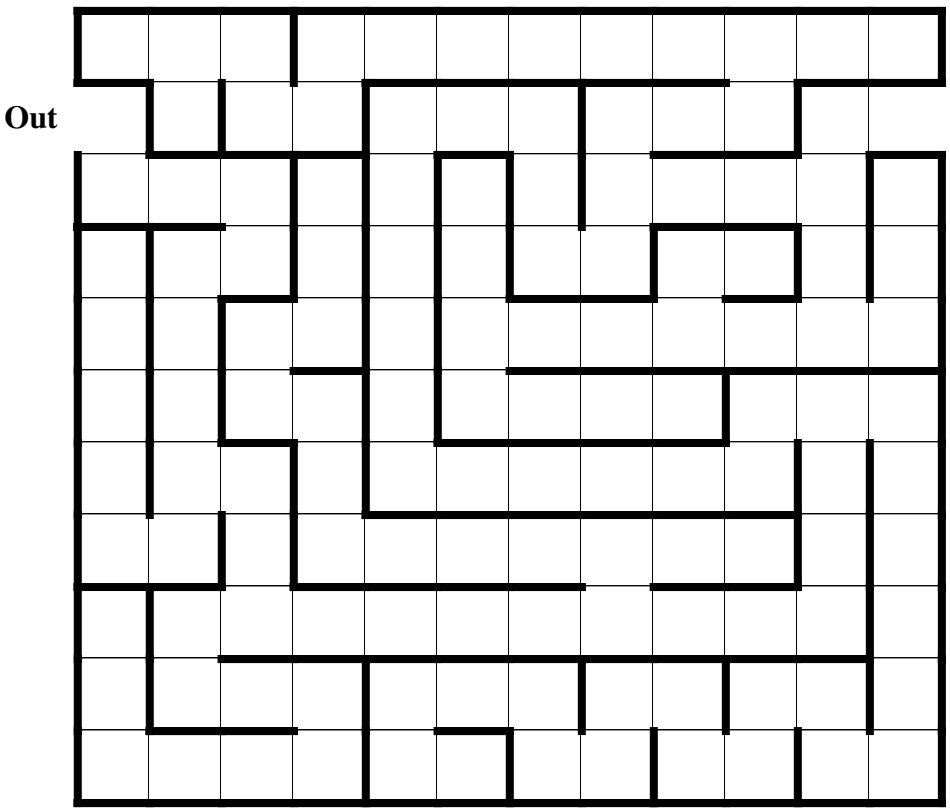


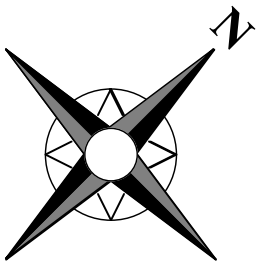
Direction	Number of Squares

Mazes and Compass Points 2.

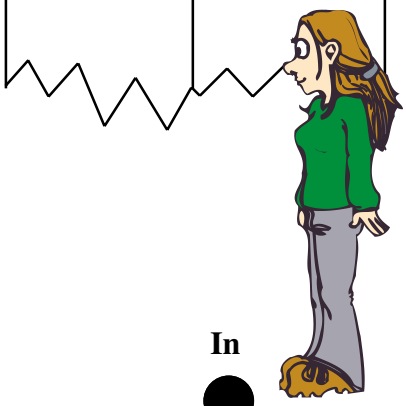
Beth has been blind-folded and put at the entrance of a maze.
She knows her compass directions and the number of squares she passes.
Notice the direction of the compass.
Copy and fill in the table showing how to get her through each maze.

1).



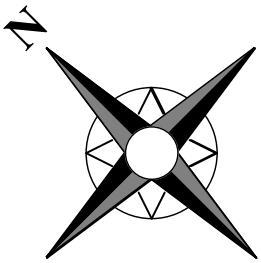


Direction	Number of Squares
South West	2

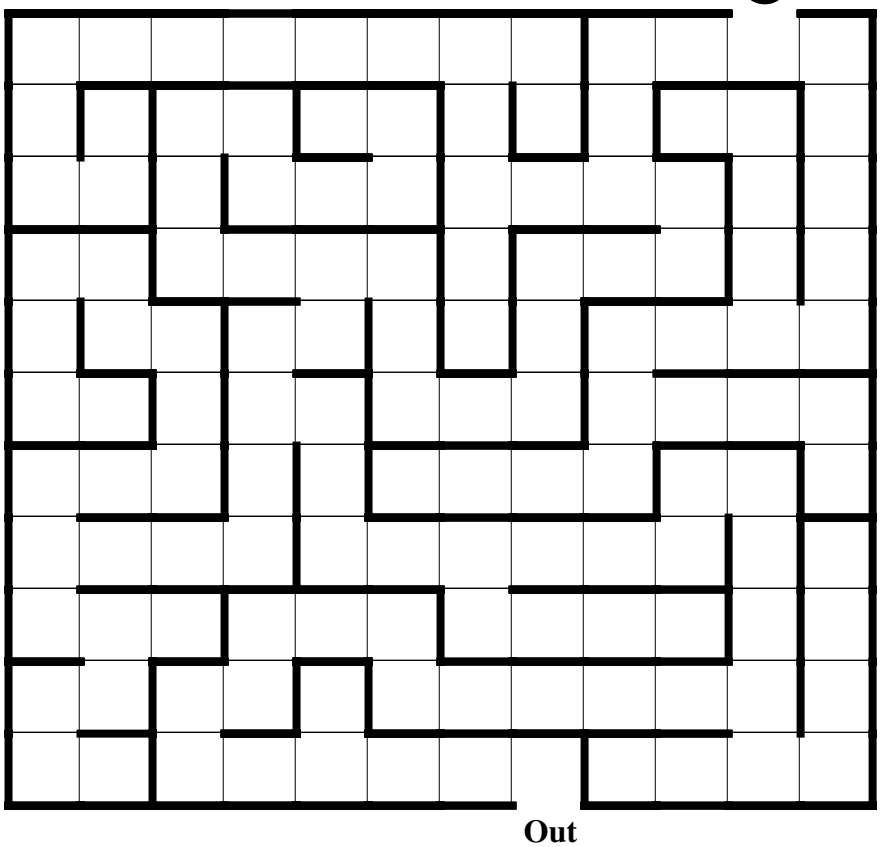


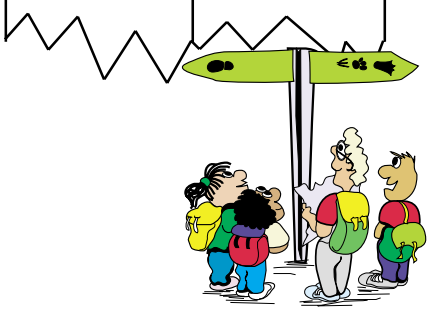
2).

In

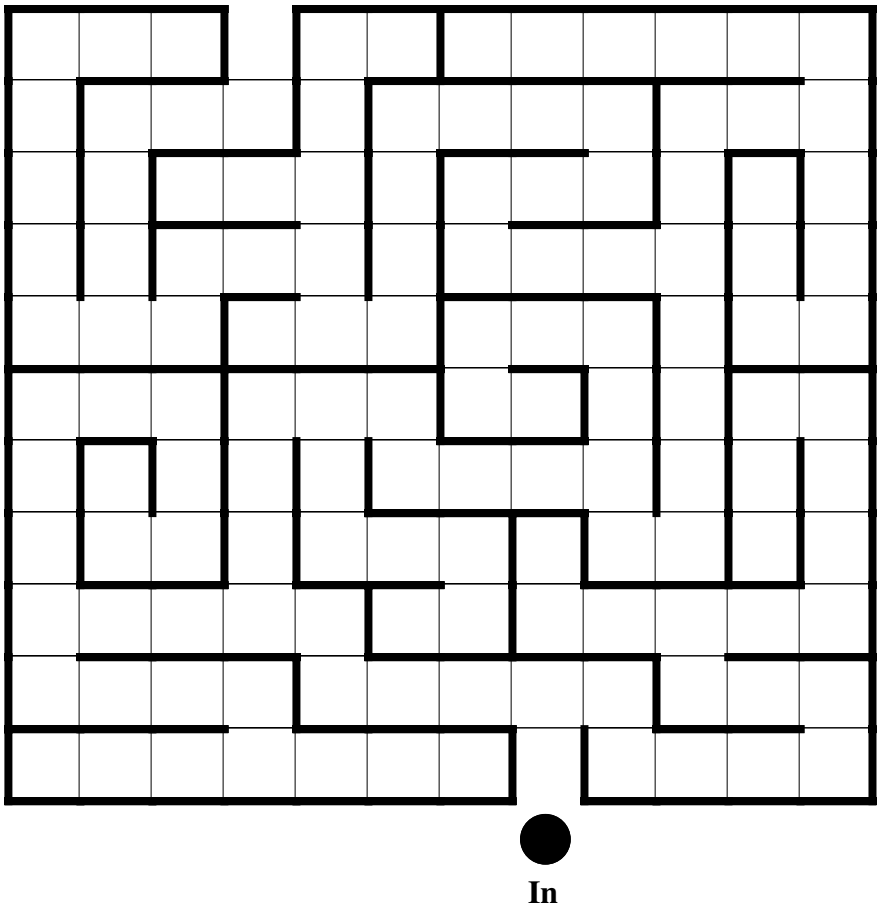


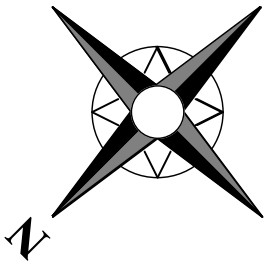
Direction	Number of Squares





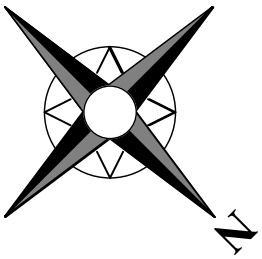
3).



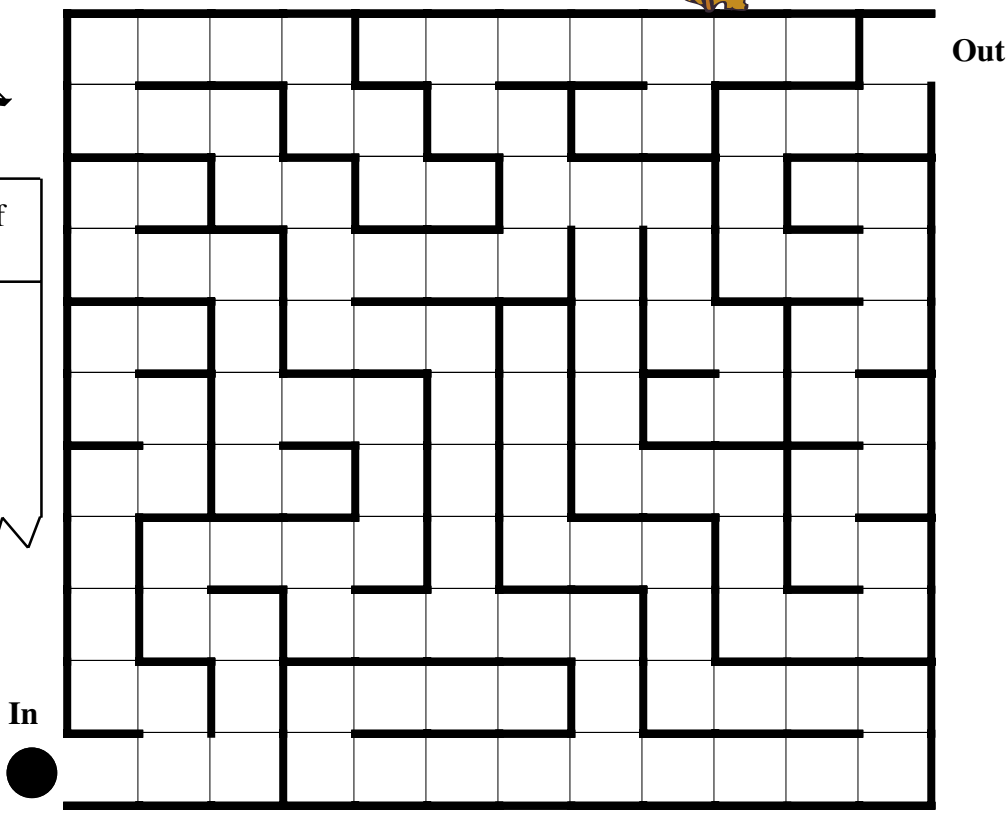


Direction	Number of Squares

4).



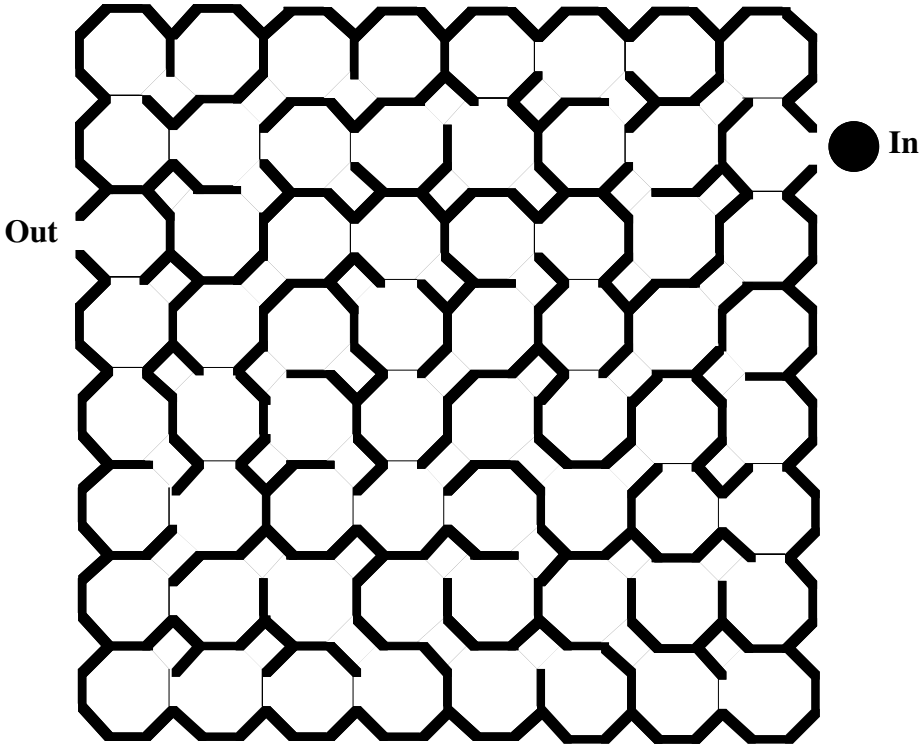
Direction	Number of Squares

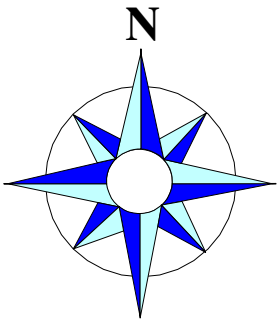


Room Mazes and Compass Points.

Alex has been put in a maze of rooms. Rooms are squares or octagons.
She knows her compass directions and the number of rooms she passes through.
Copy and fill in the table showing how to get her through each maze.

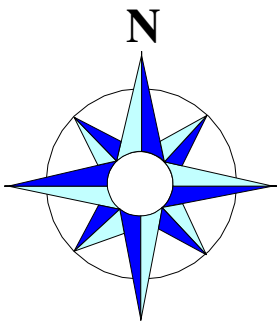
1).



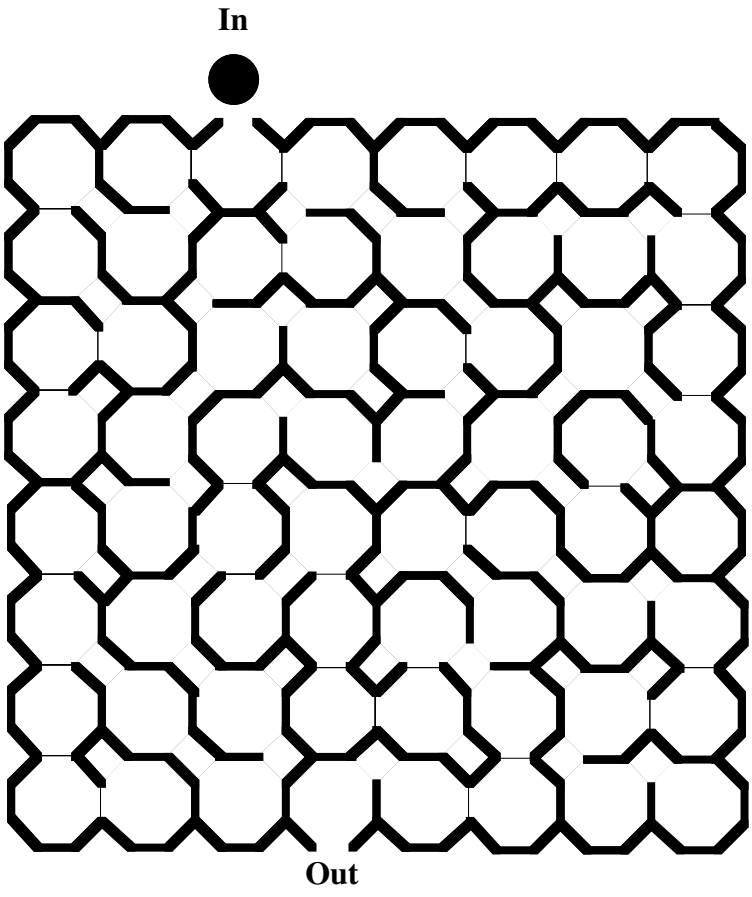


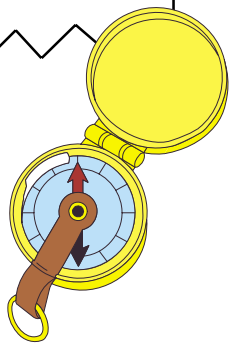
Direction	Number of Rooms
West	1

2).

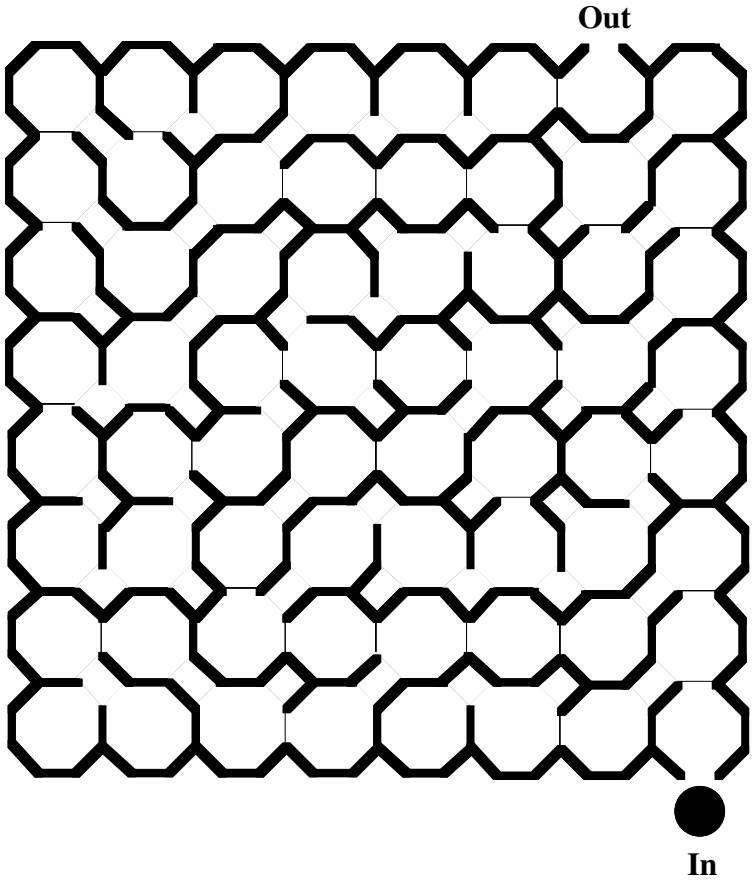


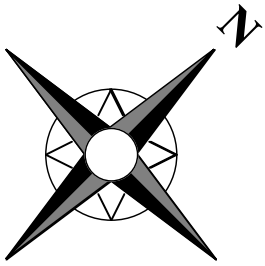
Direction	Number of Rooms





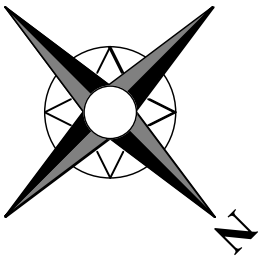
3). Be careful - look where North is now !!



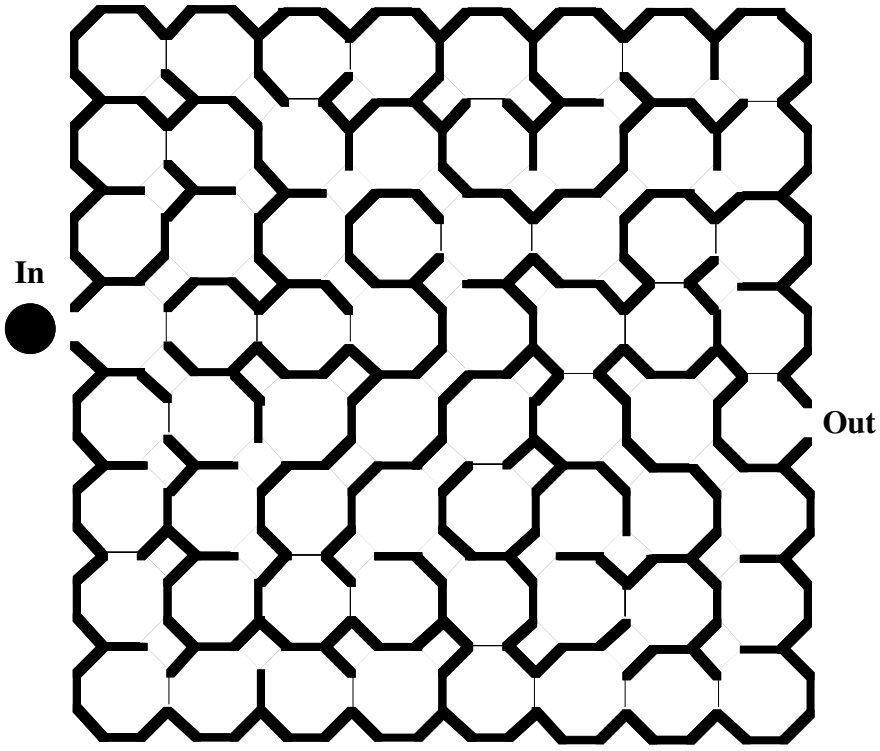


Direction	Number of Rooms

4).

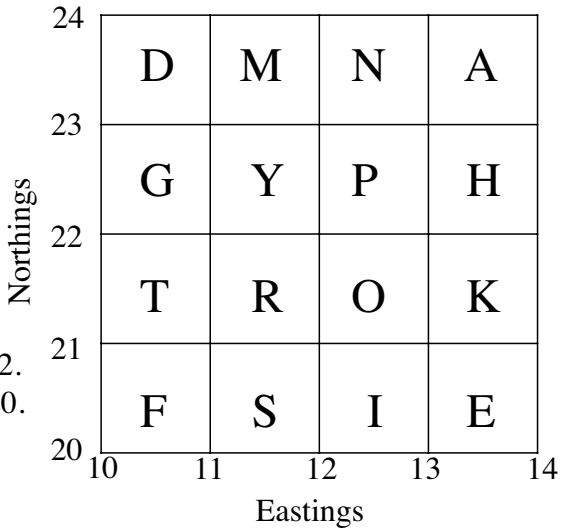


Direction	Number of Rooms

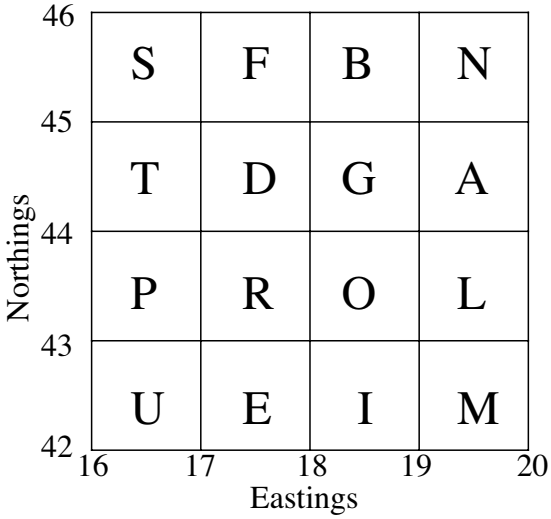


Four -Figure Grid References.

Use the grid to find the mystery words.



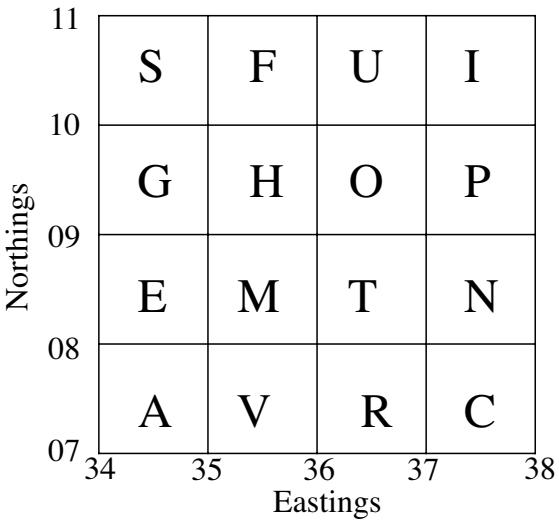
1). 1021, 1121, 1122.
2). 1022, 1121, 1220, 1023.
3). 1123, 1221, 1021, 1322.
4). 1123, 1323, 1021, 1322, 1120.
5). 1223, 1221, 1120, 1320, 1122.
6). 1222, 1323, 1121, 1321, 1320, 1121.
7). 1123, 1122, 1120, 1021, 1320, 1121, 1122.
8). 1121, 1320, 1020, 1320, 1121, 1320, 1320.

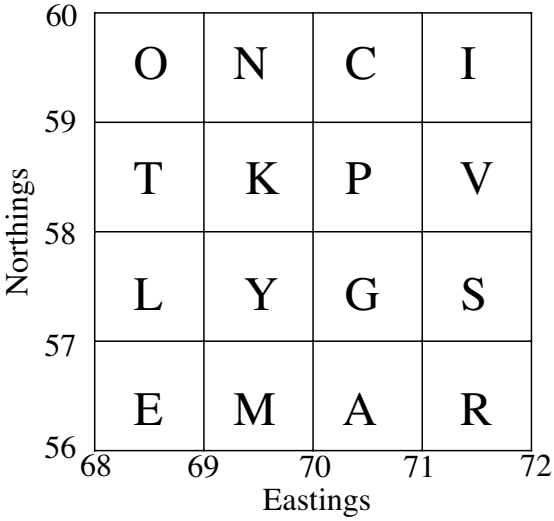


9). 1845, 1944, 1644.
10). 1845, 1944, 1743, 1742.
11). 1745, 1842, 1945, 1744.
12). 1844, 1642, 1742, 1645, 1645.
13). 1942, 1842, 1744, 1844, 1742, 1644.
14). 1943, 1742, 1644, 1644, 1742, 1743, 1645.
15). 1945, 1642, 1942, 1845, 1742, 1743, 1645.
16). 1645, 1644, 1742, 1743, 1943, 1842, 1945, 1844.

Write the grid references for these words.

17). RUN
18). FAST
19). STAMP
20). CHURCH
21). FEATURE
22). GRINNING
23). FRACTURE
24). CRUNCHING



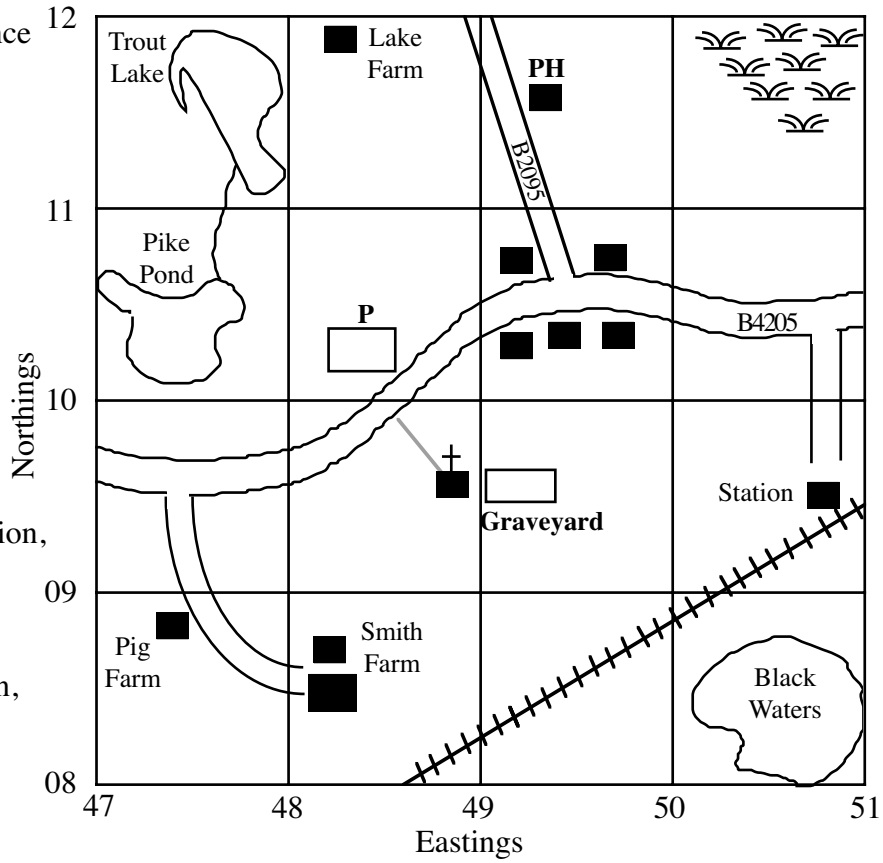


25). PARTY
26). STICK
27). POINTS
28). NOTICE
29). TRAVEL
30). PRESENTS
31). SEPARATE
32). PRESCRIPTION

33). Now make up your own grid and write a secret message to the person next to you.

Give the **four figure** grid reference for the following landmarks:-

34). Black Waters,
35). Lake Farm,
36). **P**ublic **H**ouse,
37). B4205/B2095 Junction,
38). Pike Pond,
39). Graveyard,
40). Car **P**ark,
41). Pig Farm,
42). Station,
43). Boggy Ground,
44). B4205/Pig Farm Rd. Junction,
45). Church,
46). Smith Farm,
47). Trout Lake,
48). B4205/Station Rd. Junction,
49). Which is the only square you haven't given a grid reference for ?



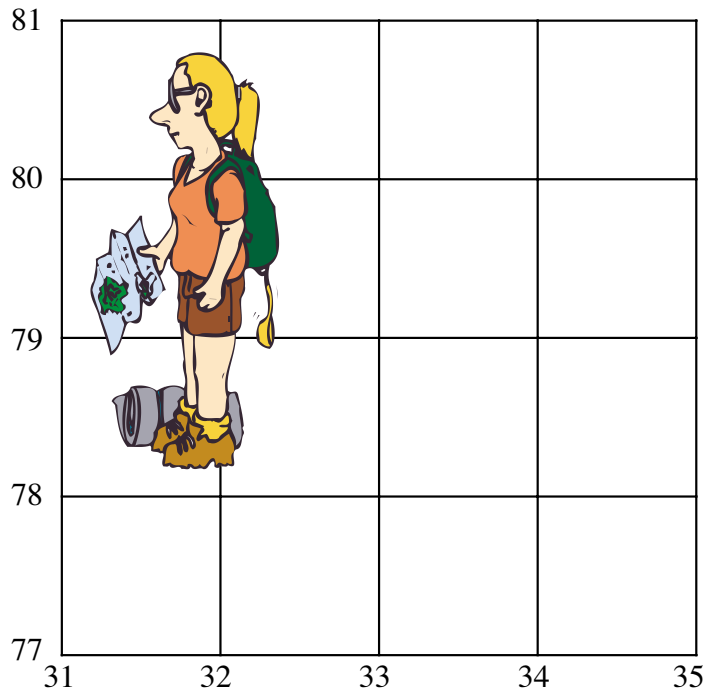
Make a Map.

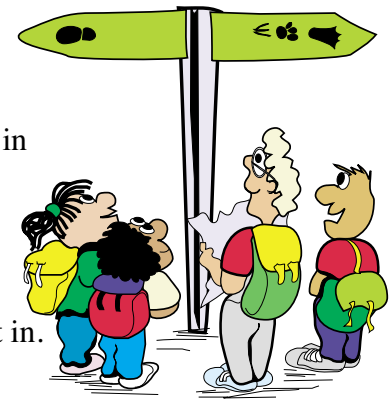
Copy this grid onto squared paper.

It will need to be a little bit bigger than the grid shown.

Follow the instructions where to place all the landmarks.

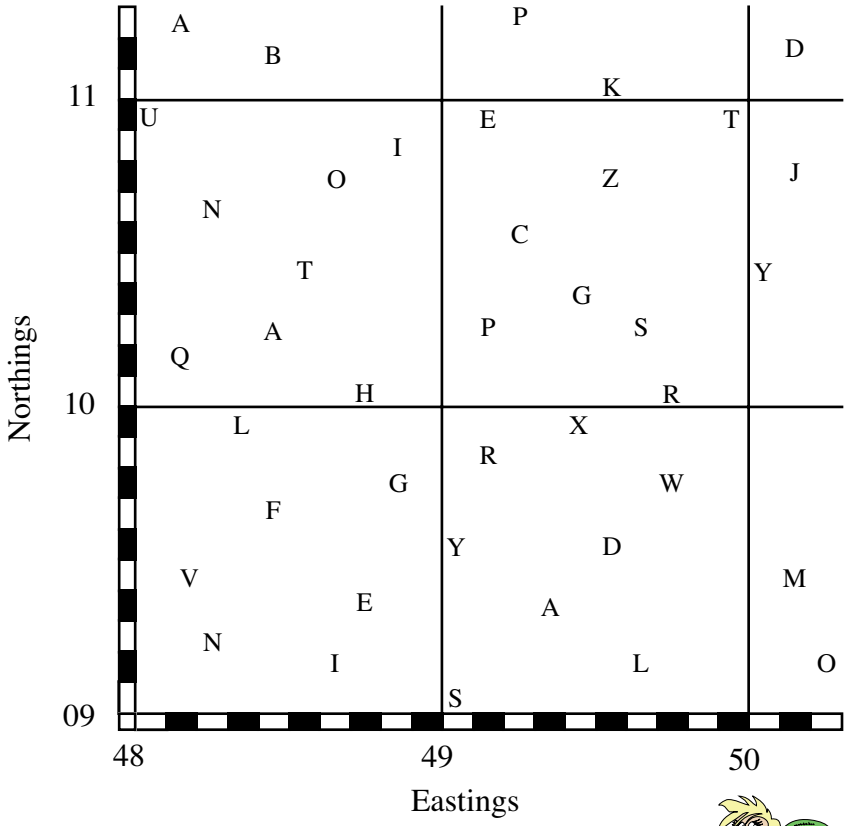
1). In 3279 is the church.
2). The graveyard is in 3179.
3). Placid Lake is in 3180.
4). Moo Farm and Bleat Farm are in 3377.
5). The Rose and Crown Public House is sited in 3480.
6). 3280 is all boggy ground.
7). The B5722 runs from 3178 to 3478.
8). The B6444 meets the B5722 at a T-junction in square 3378. The B6444 goes off the map at 3380.
9). A railway line goes from 3479 to 3177. It goes under the B6444 in square 3379 and over the B5722 at 3278.
10). The railway station is situated in 3177.
11). Now add in your own features. Remember any houses or farms will need to be serviced by roads or tracks. When you have finished drawing it out, colour it in.





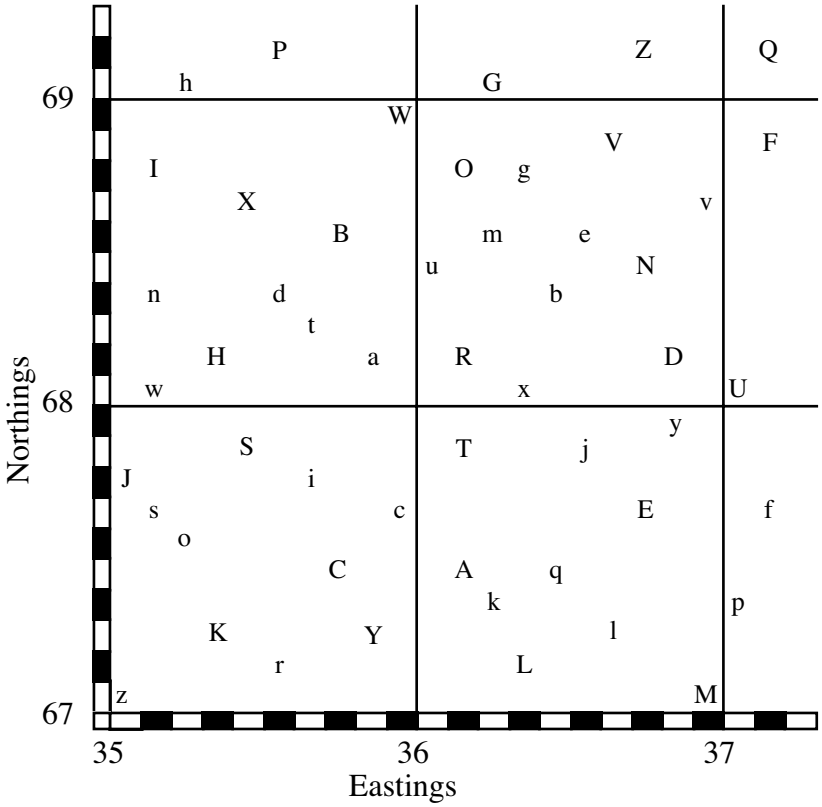
Six -Figure Grid References.

Use the grid to find out the mystery words.



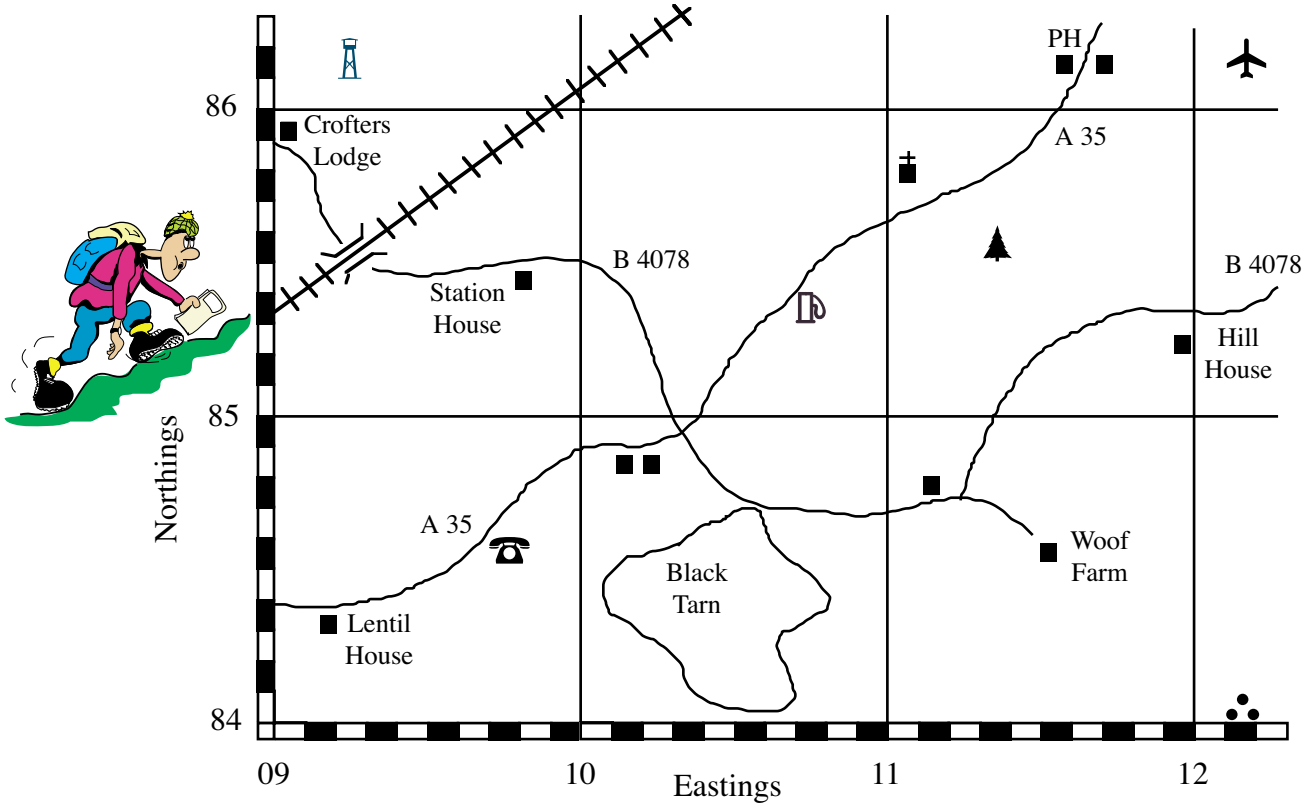
1). 486107, 494099.
2). 484096, 480109, 482092.
3). 495107, 486107, 502091.
4). 501094, 481112, 491102, 490090.
5). 492105, 484102, 499109, 496102.
6). 501107, 491109, 484102, 482092, 496102.
7). 481101, 480109, 486091, 492105, 495110.
8). 501094, 502091, 482092, 491109, 490095.
9). 488097, 488108, 494103, 488097, 483099, 491109.
10). 497097, 486107, 491098, 497100, 486091, 487093, 501111.
11). 491098, 487100, 486107, 501094, 484111, 480109, 490090.
12). 487100, 480109, 482092, 501111, 497100, 491109, 495095.
13). 484096, 496091, 481112, 492112, 491102, 488108, 482092, 494103.

14). 492105, 502091, 482106, 499109, 486107, 480109, 491098, 496102.
15). 497100, 487093, 484096, 491109, 491098, 487093, 482106, 492105, 487093.
16). 485104, 491098, 481112, 492112, 487093, 495107, 488108, 480109, 501094.
17). 492105, 481112, 496091, 492105, 480109, 483099, 493093, 499109, 486107, 497100.
18). 487100, 502091, 491098, 486091, 495107, 486107, 482092, 499109, 484102, 496091.
19). 490090, 492105, 488108, 491109, 482092, 485104, 486091, 484096, 488108, 492105.
20). 501094, 481112, 485104, 487100, 491109, 501094, 484102, 499109, 488108, 492105, 493093, 496091.



Write down the 6-figure grid reference for the following words. Notice some are lower case letters and some are capitals. You must use the same type as in the word.

21). Ace
22). Kite
23). Yoyo
24). Ruler
25). Ozone
26). Equal
27). Joiner
28). Square
29). Animal
30). Pencil
31). Decimal
32). Compass
33). Triangle
34). Fruitful
35). Shipping
36). Exciting
37). Vertical
38). Beautiful
39). Wonderful
40). Effervescence



41). Give the 6-figure grid reference for the following symbols,

a). b). c).

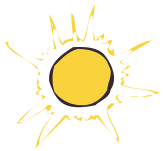
d). e). f).

42). Give the 6-figure grid reference for the following places,

a). Woof Farm, b). Station House,

c). Lentil House, d). Hill House,

e). Crofters Lodge,



43). Give the 6-figure grid reference where,

a). the road to Woof Farm leaves the B 4078,

b). the railway line crosses over the B 4078,

c). the church is,

d). the A 35 and B 4078 meet at cross roads,

e). Black Tarn is closest to the B 4078.

44). Where would I be standing if I was at

a). 115861 b). 104843 c). 100860

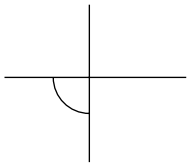
d). Why would the last two places **not** be a good place to stand ?

45). On graph paper make up your own map.
Make the borders look like this one with 10 black and white rectangles to each grid.
Give each grid a reference number.
Draw roads, railway lines, lakes and rivers. Make up names for all the roads.
Mark on individual houses and farms. Remember the houses and farms must be serviced by a near by road. You may want to name some of the houses.
Mark on 10 landmarks, such as an airport, a monument etc..
Colour it all in neatly.
Now write down some questions about the map. Get your neighbour to answer them.

Angles (Amounts of Turn).

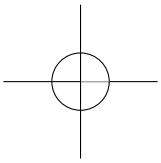
Copy the following diagrams. Fill in the missing information about the marked angle.

1).



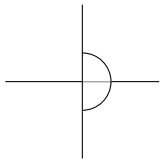
____ $\frac{1}{4}$ turn
____ right angle
____ degrees

2).



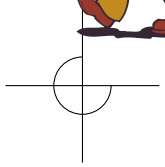
____ $\frac{1}{4}$ turns
____ right angles
____ degrees

3).



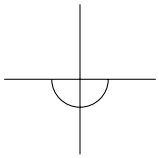
____ $\frac{1}{4}$ turns
____ right angles
____ degrees

4).



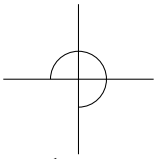
____ $\frac{1}{4}$ turns
____ right angles
____ degrees

5).



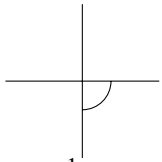
____ $\frac{1}{4}$ turns
____ right angles
____ degrees

6).



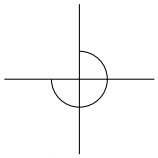
____ $\frac{1}{4}$ turns
____ right angles
____ degrees

7).



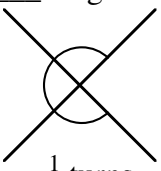
____ $\frac{1}{4}$ turn
____ right angle
____ degrees

8).



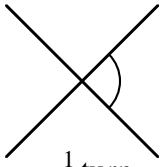
____ $\frac{1}{4}$ turns
____ right angles
____ degrees

9).



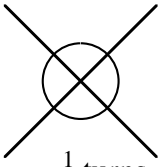
____ $\frac{1}{4}$ turns
____ right angles
____ degrees

10).



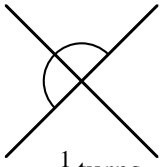
____ $\frac{1}{4}$ turn
____ right angle
____ degrees

11).



____ $\frac{1}{4}$ turns
____ right angles
____ degrees

12).

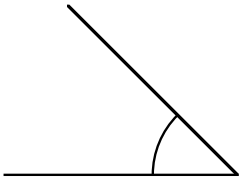


____ $\frac{1}{4}$ turns
____ right angles
____ degrees

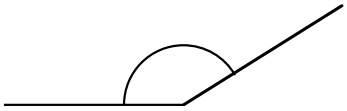
Copy the following angles. Then write the word that best describes each from the list below.

ACUTE	OBTUSE	REFLEX

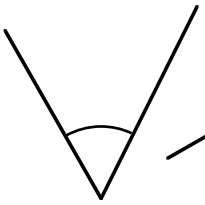
13).



14).



15).



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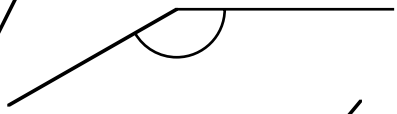

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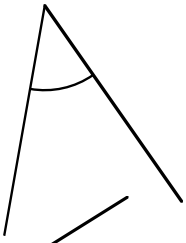

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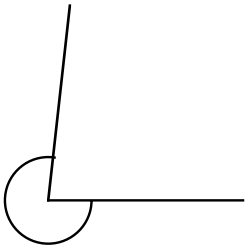

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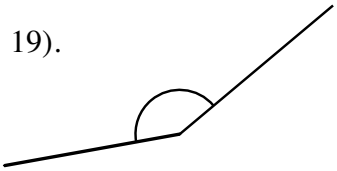
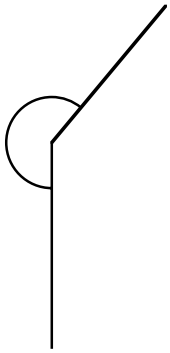


20).



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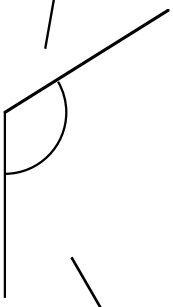

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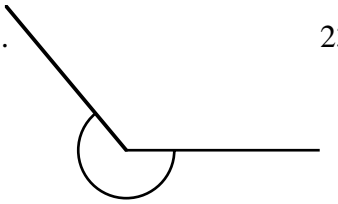

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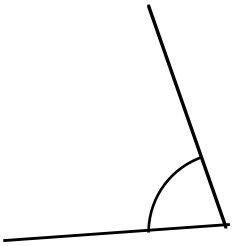

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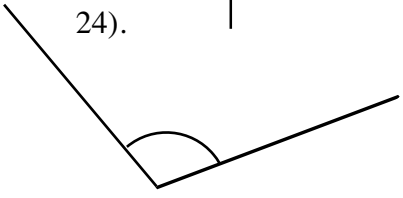

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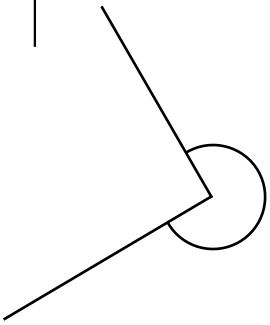
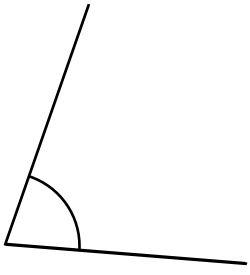


26).



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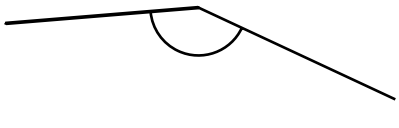
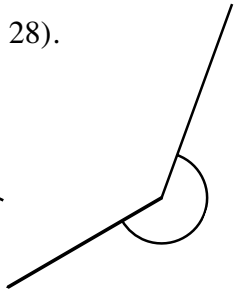
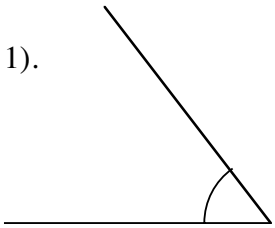


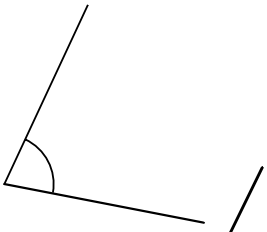
28).

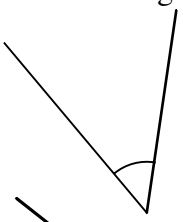


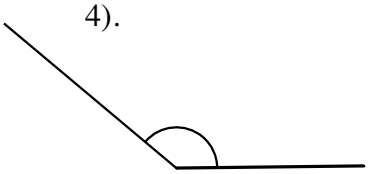
Estimating Angles.

For the following angles a). state whether they are **acute**, **obtuse** or **reflex**; and
b). estimate the size of the marked angle.

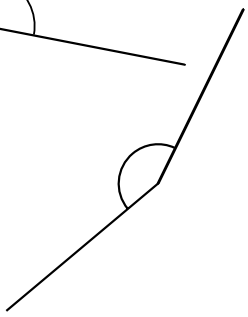
1). 

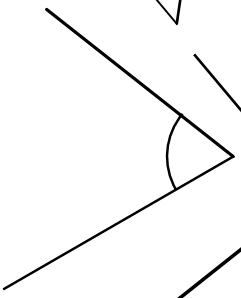
2). 

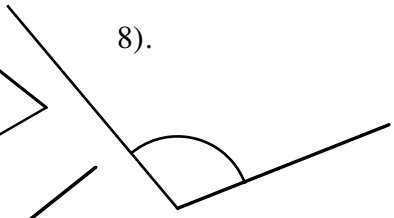
3). 

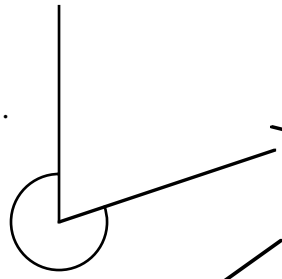
4). 

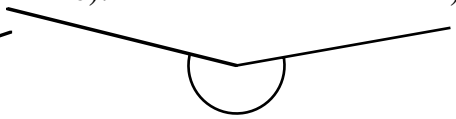
5). 

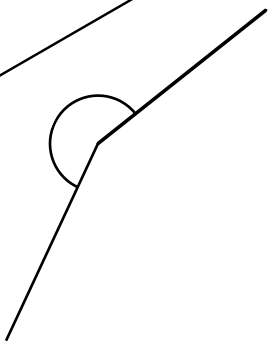
6). 

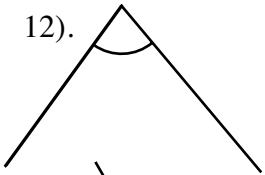
7). 

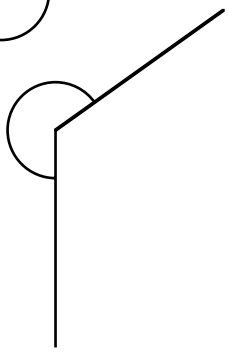
8). 

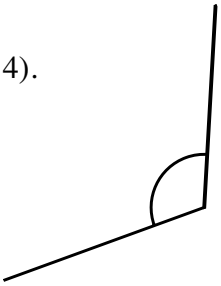
9). 

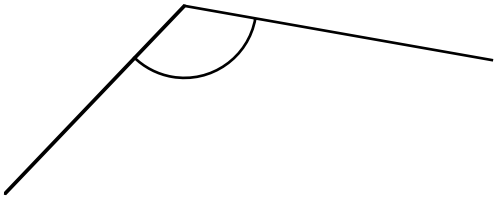
10). 

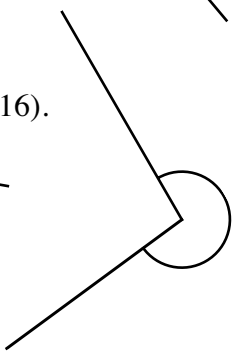
11). 

12). 

13). 

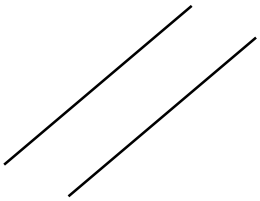
14). 

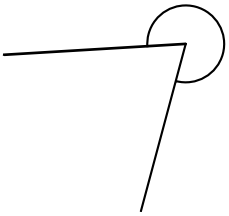
15). 

16). 

Copy the following diagrams. Then write the word that best describes each from the list below.

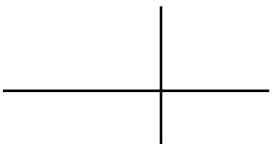
ACUTE	PERPENDICULAR	OBTUSE	PARALLEL
VERTICAL	HORIZONTAL	REFLEX	

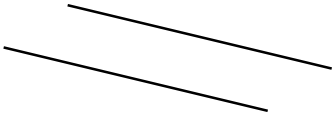
17). 

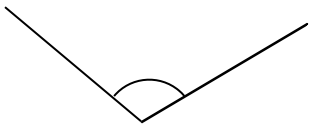
18). 

19).

20). 

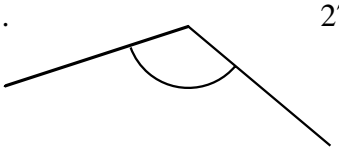
21). 

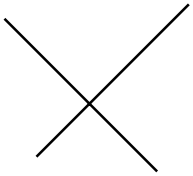
22). 

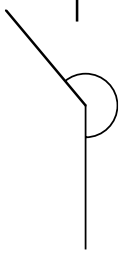
23). 

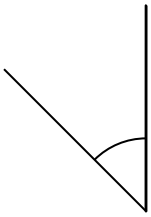
24).

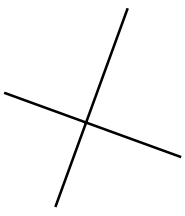
25).

26). 

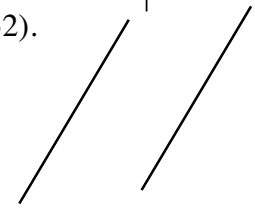
27). 

28). 

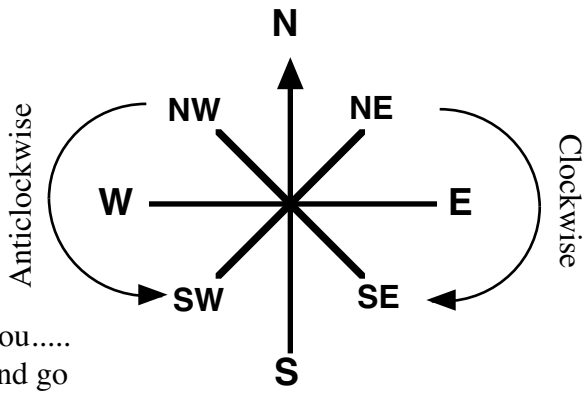
29). 

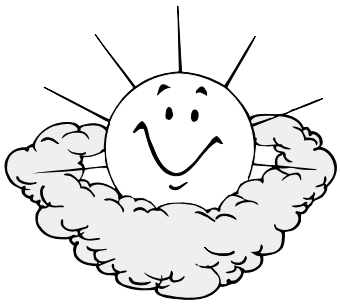
30). 

31).

32). 

Angles and Compass Points.





A). Where do you end up if you.....

1). start facing **north** and go

a). $\frac{1}{4}$ turn clockwise, b). $\frac{3}{4}$ turn clockwise, c). $\frac{1}{2}$ turn anticlockwise,

d). $\frac{3}{4}$ turn anticlockwise, e). $\frac{1}{8}$ turn anticlockwise, f). $\frac{3}{8}$ turn clockwise?

2). start facing **south** and go

a). $\frac{1}{4}$ turn anticlockwise, b). $\frac{3}{4}$ turn anticlockwise, c). $\frac{1}{2}$ turn anticlockwise,

d). $\frac{3}{4}$ turn clockwise, e). $\frac{1}{8}$ turn clockwise, f). $\frac{3}{8}$ turn anticlockwise?

3). start facing **west** and go

a). $\frac{1}{4}$ turn anticlockwise, b). $\frac{3}{4}$ turn clockwise, c). $\frac{1}{2}$ turn clockwise,

d). $\frac{3}{4}$ turn clockwise, e). $\frac{3}{8}$ turn anticlockwise, f). $\frac{5}{8}$ turn clockwise?

4). start facing **east** and go

a). $\frac{3}{4}$ turn anticlockwise, b). $\frac{3}{4}$ turn clockwise, c). $\frac{1}{4}$ turn clockwise,

d). $\frac{1}{8}$ turn anticlockwise, e). $\frac{3}{8}$ turn clockwise, f). $\frac{7}{8}$ turn clockwise?

5). start facing **north west** and go

a). $\frac{1}{2}$ turn clockwise, b). $\frac{1}{4}$ turn anticlockwise, c). $\frac{1}{4}$ turn clockwise,

d). $\frac{3}{4}$ turn anticlockwise, e). $\frac{1}{8}$ turn anticlockwise, f). $\frac{1}{8}$ turn clockwise?

6). start facing **south east** and go

a). $\frac{3}{4}$ turn anticlockwise, b). $\frac{1}{2}$ turn clockwise, c). $\frac{1}{4}$ turn anticlockwise,

d). $\frac{1}{8}$ turn anticlockwise, e). $\frac{1}{8}$ turn clockwise, f). $\frac{3}{8}$ turn clockwise?

7). start facing **south west** and go

a). $\frac{3}{4}$ turn anticlockwise, b). $\frac{3}{4}$ turn clockwise, c). $\frac{1}{8}$ turn anticlockwise,

d). $\frac{3}{8}$ turn anticlockwise, e). $\frac{3}{8}$ turn clockwise, f). $\frac{5}{8}$ turn anticlockwise?

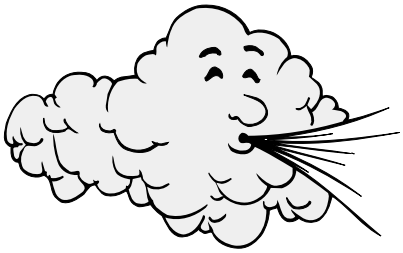
8). start facing **north east** and go

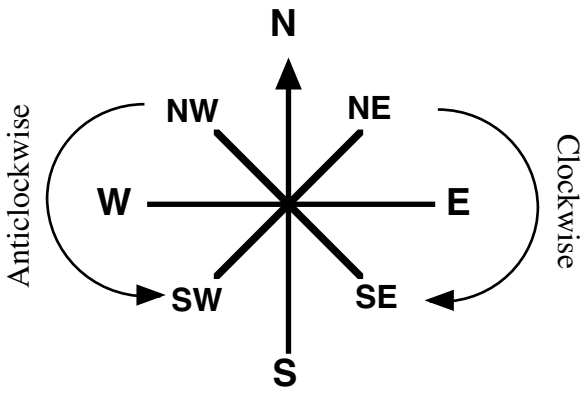
a). $\frac{3}{4}$ turn clockwise, b). $\frac{1}{8}$ turn clockwise, c). $\frac{3}{8}$ turn anticlockwise,

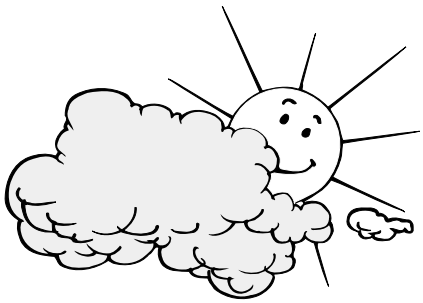
d). $\frac{5}{8}$ turn anticlockwise, e). $\frac{7}{8}$ turn clockwise, f). $\frac{7}{8}$ turn anticlockwise?

B). What fraction of a turn is there from

1). W to S anticlockwise,	2). N to S clockwise,	3). E to W clockwise,
4). N to E clockwise,	5). N to W anticlockwise,	6). N to E anticlockwise,
7). E to SE clockwise,	8). NW to SW anticlockwise,	9). SW to SE anticlockwise,
10). N to NW anticlockwise,	11). SW to NE anticlockwise,	12). E to NW anticlockwise,
13). N to SE clockwise,	14). NE to SE clockwise,	15). NW to W anticlockwise,
16). NE to S clockwise,	17). SE to NE anticlockwise,	18). W to SW anticlockwise,
19). NW to SE anticlockwise,	20). NE to W clockwise,	21). NE to W anticlockwise,
22). SE to W clockwise,	23). S to NE clockwise,	24). SW to N anticlockwise,
25). NW to S clockwise,	26). NE to SE anticlockwise,	27). NE to N clockwise,
28). S to E clockwise,	29). NW to S anticlockwise,	30). NW to NE anticlockwise,
31). W to NW anticlockwise,	32). SW to S anticlockwise,	33). E to SW clockwise,
34). N to NW clockwise,	35). SE to N anticlockwise,	36). NW to W clockwise,
37). S to SE clockwise,	38). SE to E anticlockwise,	39). SE to NE clockwise,
40). S to SW anticlockwise?		







C). Where do you end up if you.....

1). start facing **north** and go
   a). 90˚ clockwise, b). 180˚ anticlockwise, c). 90˚ anticlockwise,
   d). 270˚ anticlockwise, e). 45˚ clockwise, f). 45˚ anticlockwise?

2). start facing **south** and go
   a). 180˚ clockwise, b). 90˚ clockwise, c). 45˚ anticlockwise,
   d). 90˚ clockwise, e). 270˚ clockwise, f). 135˚ anticlockwise?

3). start facing **west** and go
   a). 90˚ clockwise, b). 45˚ clockwise, c). 45˚ anticlockwise,
   d). 270˚ anticlockwise, e). 135˚ clockwise, f). 135˚ anticlockwise?

4). start facing **east** and go
   a). 45˚ anticlockwise, b). 90˚ clockwise, c). 135˚ anticlockwise,
   d). 180˚ anticlockwise, e). 135˚ clockwise, f). 225˚ clockwise?

5). start facing **north west** and go
   a). 90˚ clockwise, b). 45˚ clockwise, c). 270˚ anticlockwise,
   d). 135˚ anticlockwise, e). 225˚ anticlockwise, f). 225˚ clockwise?

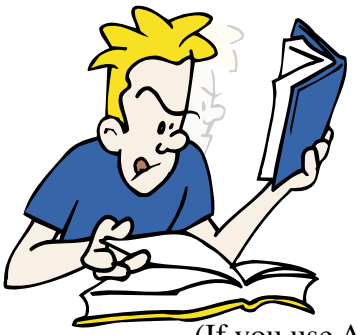
6). start facing **south east** and go
   a). 270˚ clockwise, b). 45˚ clockwise, c). 135˚ anticlockwise,
   d). 180˚ clockwise, e). 225˚ clockwise, f). 315˚ anticlockwise?

7). start facing **south west** and go
   a). 45˚ clockwise, b). 90˚ anticlockwise, c). 180˚ clockwise,
   d). 225˚ anticlockwise, e). 315˚ anticlockwise, f). 315˚ clockwise?

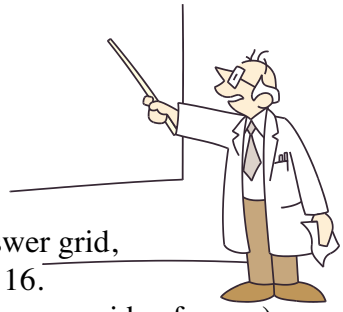
8). start facing **north east** and go
   a). 90˚ anticlockwise, b). 135˚ clockwise, c). 270˚ anticlockwise,
   d). 315˚ anticlockwise, e). 45˚ clockwise, f). 315˚ clockwise?

D). How many degrees are there between these points:

1). N to E clockwise,	2). N to W anticlockwise,	3). E to W clockwise,
4). W to S anticlockwise,	5). N to S clockwise,	6). N to E anticlockwise,
7). E to SE clockwise,	8). NW to SW anticlockwise,	9). N to NW anticlockwise,
10). SW to SE anticlockwise,	11). SW to NE anticlockwise,	12). E to NW anticlockwise,
13). N to SE clockwise,	14). NE to SE clockwise,	15). NW to W anticlockwise,
16). NE to S clockwise,	17). SE to NE anticlockwise,	18). W to SW anticlockwise,
19). NW to SE anticlockwise,	20). NE to W clockwise,	21). NE to W anticlockwise,
22). SE to W clockwise,	23). S to NE clockwise,	24). SW to N anticlockwise,
25). S to E clockwise,	26). NW to S anticlockwise,	27). NW to NE anticlockwise,
28). W to NW anticlockwise,	29). SW to S anticlockwise,	30). E to SW clockwise,
31). NW to S clockwise,	32). NE to SE anticlockwise,	33). NE to N clockwise,
34). N to NW clockwise,	35). SE to N clockwise,	36). NW to W clockwise,
37). S to SE clockwise,	38). SE to E anticlockwise,	39). S to SW anticlockwise,
40). SE to NE clockwise.		



Coordinate Shapes 1.



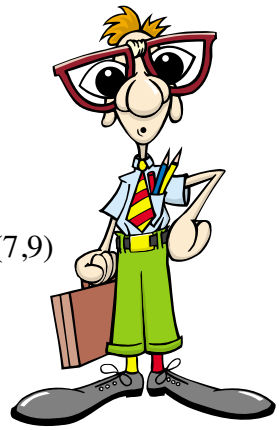
For each of these questions you will need to draw an answer grid,
with the x-axis from 0 - 12 and the y-axis from 0 - 16.
(If you use A4 squared paper longways you will be able to fit 2 grids on one side of paper).
Plot the given points and join them up in the order shown.
Where you see a gap or start a new line, start a new part of the shape.
Do **not** join this to the previous coordinate.

1). (12,13) (10,14) (9,16) (8,14) (5,4) (5,1) (3,1) (9,0) (7,1) (7,4)
(4,5) (4,6) (5,6) (5,5) (4,5) (5,16) (5,14) (4,12)
(5,8) (5,7) (6,7) (6,8) (5,8) (7,9) (7,6)
(4,10) (5,10) (5,9) (4,9) (4,10) (5,1) (6,0) (5,4) (1,0) (3,4) (3,9)
(6,1) (7,1) (9,0) (7,4) (7,6) (5,14) (6,12) (7,9)
(12,13) (10,12) (9,10) (8,12) (6,13) (8,14)
(1,0) (3,1) (3,4) (3,9) (4,12)

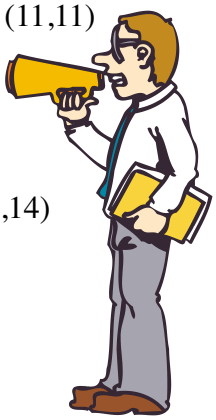
2). (1,5) (4,7) (4,4) (4,5) (5,5) (4,4) (8,1) (8,2) (10,3) (10,0) (8,1)
(9,7) (12,9) (3,12) (3,4) (4,3) (9,3) (5,12) (8,12)
(3,0) (3,3) (5,2) (5,1) (3,0) (12,7) (9,7)
(5,9) (5,10) (6,10) (6,9) (5,9) - shade this in
(1,9) (4,7) (7,9) (7,11) (9,11) (9,9) (7,9) (5,3) (5,1) (8,1) (8,3)
(8,12) (9,14) (10,12) (5,5) (9,5) (9,4) (8,5)
(8,9) (8,10) (9,10) (9,9) (8,9) - shade this in
(9,7) (12,5) (9,3) (10,4) (10,12) (5,6) (8,6) (8,8) (5,8) (5,6)
(1,7) (4,7) (3,12) (4,14) (5,12) (6,11) (4,11) (4,9) (6,9) (6,11)

3). (5,13) (12,13) (12,15) (10,15) (10,14) (12,14) (2,11) (2,9) (1,9) (1,10) (2,10)
(7,9) (7,11) (8,11) (8,10) (7,10) (11,10) (11,12) (9,12) (9,11) (11,11)
(7,3) (7,5) (8,5) (8,4) (7,4) (11,2) (11,4) (9,4) (9,3) (11,3)
(12,6) (9,6) (9,8) (8,7) (9,7) (2,12) (1,13) (2,14) (2,3) (5,1) (12,1)
(8,13) (8,16) (6,13) (2,16) (1,15) (2,14) (10,4) (10,2) (11,2)
(7,9) (6,9) (6,10) (7,10) (9,11) (9,10) (10,10) (10,12) (8,16) (12,16) (12,15)
(8,4) (8,3) (6,3) (6,5) (7,5) (9,8) (12,8) (12,13) (8,7) (9,6)
(9,3) (9,2) (10,2) (2,3) (2,9) (7,9) (8,9) (8,10) (12,1) (12,8)
(11,10) (10,10) (7,4) (6,4) (6,10) (6,11) (7,11) (5,1) (5,13) (2,11)

4). (8,16) (8,13) (7,12) (7,1) (6,9) (6,3)
(1,5) (0,4) (1,3) (10,2) (11,1) (11,3) (10,16) (10,13)
(2,8) (1,9) (2,10) (12,11) (11,11) (12,10)
(3,5) (6,5) (9,3) (9,11) (9,12) (9,15)
(1,1) (0,2) (1,3) (2,10) (1,11) (2,12) (6,3) (7,3) (6,9) (7,9)
(4,4) (4,6) (10,2)(11,2) (12,10) (12,12)
(7,1) (9,3) (9,11)(7,12)



5). (2,9) (2,10) (3,10) (3,9) (2,9) - shade this in (8,15) (7,16) (6,15) (5,16) (4,15)
(8,9) (8,10) (9,10) (9,9) (8,9) - shade this in (1,11) (2,15) (6,11) (10,15) (11,11)
(1,1) (2,1) (2,2) (1,2) (1,1) - shade this in (0,9) (3,12) (5,10)
(11,4) (11,5) (12,5) (12,4) (11,4) - shade this in (7,10) (9,12) (12,9)
(10,0) (11,0) (11,1) (10,1) (10,0) - shade this in
(4,13) (4,15) (5,15) (5,14) (6,14) (6,15)
(3,6) (4,6) (4,7) (3,7) (3,6) - shade this in (5,14) (6,13) (7,14) (6,14)
(8,0) (7,1) (7,9) (9,11) (11,9) (11,7) (12,9) (7,15) (7,14)
(1,11) (2,14) (5,10) (0,9) (1,7) (1,9) (3,11) (5,9) (5,1) (4,0)
(8,13) (8,15) (5,15) (11,11) (10,14) (7,10)

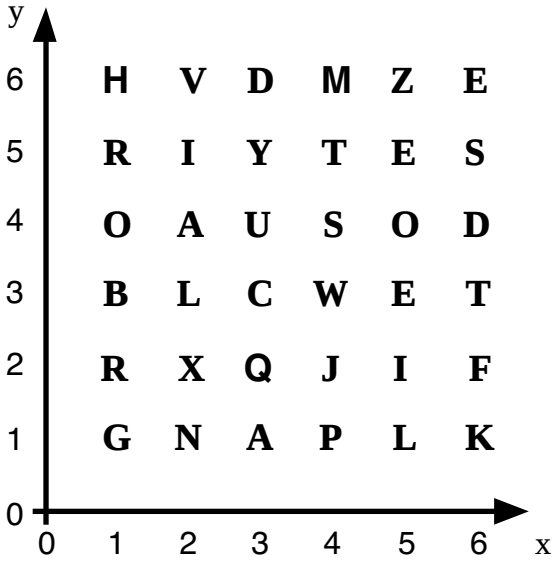


6). (0,10) (2,8) (2,1) (3,15) (4,15) (4,14) (3,14) (3,15) (11,3) (11,12) (10,13)
(10,6) (10,10) (9,11) (9,7) (9,9) (8,10) (5,11) (6,12) (4,11) (5,10) (4,10) (5,9)
(9,14) (9,15) (10,15) (10,14) (9,14) (4,7) (5,6) (4,5) (6,4) (5,5) (9,5)
(6,10) (6,6) (7,6) (7,7) (8,7) (5,15) (5,14) (6,14) (6,15) (5,15)
(4,2) (3,3) (3,12) (7,8) (7,9) (6,9) (6,8) (7,8) - shade this in
(7,14) (7,15) (8,15) (8,14) (7,14) (7,7) (7,9) (8,9) (8,7)
(4,7) (5,7) (3,8) (4,8) (5,9) (0,6) (2,8) (0,8)
(6,6) (7,6) (7,7) (6,7) (6,6) - shade this in (5,11) (6,10) (7,10) (7,9)
(9,11) (5,11) (8,6) (9,7) (9,5) (10,6) (5,5) (6,7) (5,8) (6,10)
(4,2) (10,2) (11,3) (10,13) (4,13) (3,12) (2,1) (12,1) (12,16) (2,16) (2,8)

7). (7,8) (8,8) (8,9) (9,10) (8,10) (7,11)
(4,12) (4,13) (3,12) (2,12) (3,11) (0,11) (3,9) (4,6) (5,5) (6,5) (7,4) (8,4) (9,5)
(10,12) (11,13) (10,11) (11,10) (10,10) (10,9) (11,8) (10,7)
(5,10) (5,6) (6,6) (6,9) (7,9) (8,1) (8,5) (7,0)
(3,5) (2,4) (3,4) (4,3) (4,4) (5,3) (6,4) (7,3) (6,2) (8,3)
(6,12) (7,13) (6,14) (8,13) (9,14) (10,12) (10,7) (10,6) (11,5) (10,4) (9,4) (8,3)
(5,8) (6,8) (6,1) (8,5) (6,0) (3,5) (0,5) (3,7) (2,7) (3,8) (2,8) (3,9)
(6,15) (8,11) (8,15) (6,7) (7,7) (7,9) (8,10) (8,6) (7,5)
(5,6) (5,7) (6,7) (6,6) (5,6) - shade this in (8,6) (9,6) (8,7)
(4,6) (4,10) (5,11) (6,11) (7,12) (8,12) (9,11) (9,5) (6,16) (8,11) (7,16)
(4,12) (5,13) (6,12) (5,10) (6,10) (6,9)
(5,8) (5,9) (6,9) (6,8) (5,8) - shade this in.

8). (3,4) (5,2) (7,4) (9,2) (10,8) (11,8) (11,9) (10,9) (10,8)
(0,7) (0,8) (1,9) (2,9) (3,8) (3,7) (2,6) (1,6) (0,7) (5,8) (5,10) (4,9) (5,9)
(4,14) (4,15) (5,15) (5,14) (4,14) (9,1) (9,3) (7,5) (5,3) (3,5)
(10,15) (9,15) (8,14) (8,13) (7,13) (7,12) (8,11) (6,8) (8,8) (8,7) (9,6)
(10,13) (10,14) (9,14) (9,13) (10,13) (5,13) (6,14) (6,15) (5,16)
(7,8) (9,11) (9,10) (8,10) (9,11) (10,11) (10,10) (9,11)
(4,7) (4,8) (3,10) (1,10) (2,9) (2,10) (9,9) (9,8) (10,7) (11,7) (12,8) (12,9)
(8,7) (4,7) (3,6) (5,10) (5,11) (4,12) (3,12) (4,13) (3,14) (3,15) (4,16) (5,16)
(1,7) (1,8) (2,8) (2,7) (1,7) (3,10) (4,10) (4,11) (3,10) (4,8) (6,8)
(10,15) (11,14) (11,13) (10,12) (9,12) (8,13) (7,12) (5,13) (4,13) (4,12)
(5,11) (6,11) (5,10) (7,10) (7,11) (8,11) (7,10) (9,6) (9,3)
(9,1) (3,1) (3,6) (9,9) (10,10) (11,10) (12,9)

Corny Coordinates 1.

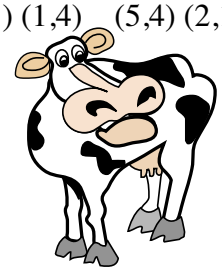


Do not write on this sheet

A). Listed below are some of the worst jokes ever told. Find out what they are!

1). (4,3) (1,6) (3,1) (4,5) (3,6) (5,4) (6,5) (5,5) (3,1) (4,6) (1,4) (2,1) (4,4) (6,3) (6,6) (1,5) (4,4) (5,3) (2,4) (6,3) ? (6,2) (5,2) (6,5) (1,6) (3,1) (2,1) (6,4) (6,5) (1,6) (5,2) (4,1) (4,4).

2). (4,3) (1,6) (5,5) (1,5) (5,3) (6,4) (1,4) (3,3) (1,4) (4,3) (4,4) (1,1) (1,4) (5,4) (2,1) (3,1) (6,2) (1,5) (5,2) (3,6) (3,1) (3,5) (2,1) (5,2) (1,1) (1,6) (6,3) ? (4,5) (1,6) (6,6) (4,6) (5,4) (1,4) - (2,6) (5,2) (5,5) (4,4).



3). (4,3) (1,6) (2,4) (6,3) (5,2) (4,4) (3,1) (4,6) (3,5) (6,3) (1,6) ? (3,1) (6,2) (5,3) (4,6) (2,4) (5,1) (5,5) (4,6) (5,4) (4,5) (1,6).

4). (4,3) (1,6) (3,5) (4,3) (2,4) (6,5) (6,3) (1,6) (5,5) (1,3) (6,6) (3,1) (3,3) (1,6) (4,3) (5,5) (6,3) ? (1,3) (5,3) (3,3) (2,4) (3,4) (6,5) (5,3) (4,5) (1,6) (5,3) (6,5) (6,6) (3,1) (4,3) (5,3) (5,5) (3,6).

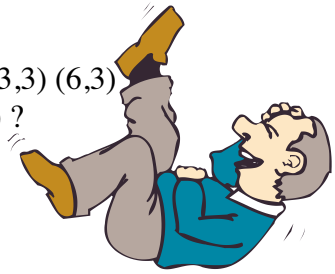
5). (4,3) (1,6) (3,1) (4,5) (6,3) (5,3) (5,1) (2,3) (4,4) (4,2) (1,4) (6,1) (5,3) (6,5) (2,4) (2,1) (3,6) (5,1) (3,1) (3,5) (4,4) (5,3) (1,1) (1,1) (6,5) ? (2,4) (3,3) (1,4) (4,6) (5,3) (6,4) (5,2) (1,6) (6,6) (2,1).

6). (4,3) (1,6) (3,5) (4,3) (2,4) (4,4) (4,4) (5,2) (2,2) (6,5) (3,3) (3,1) (1,5) (6,6) (6,4) (1,4) (6,2) (6,5) (5,3) (2,6) (5,3) (2,1) ? (1,3) (6,6) (3,3) (2,4) (3,4) (4,4) (5,5) (4,4) (6,6) (2,6) (5,3) (2,1) (3,1) (6,3) (6,6) (2,1) (5,2) (2,1) (5,3).

7). (1,6) (5,4) (4,3) (6,4) (1,4) (3,5) (5,4) (3,4) (4,6) (3,1) (6,1) (5,5) (1,1) (2,5) (2,1) (1,1) (5,3) (1,5) (4,3) (5,2) (2,1) (5,3) ? (6,3) (4,3) (2,5) (4,4) (6,3) (1,6) (2,5) (6,5) (2,4) (1,5) (4,6).

8). (4,3) (1,6) (2,5) (3,3) (1,6) (3,3) (1,6) (6,6) (5,5) (4,4) (5,3) (5,2) (6,5) (4,6) (3,1) (3,6) (5,5) (1,3) (2,4) (3,3) (6,1) (4,3) (3,1) (1,5) (6,4) (6,5) ? (5,3) (3,6) (3,1) (4,6).

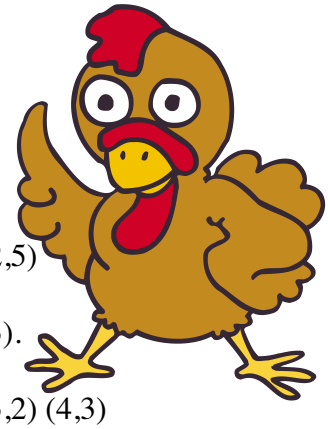
9). (4,3) (1,6) (2,5) (3,3) (1,6) (4,4) (5,2) (5,1) (2,3) (3,5) (2,5) (2,1) (6,5) (5,3) (3,3) (6,3) (5,1) (5,2) (2,6) (6,6) (4,4) (5,4) (2,1) (6,3) (1,6) (5,5) (4,6) (5,4) (1,4) (2,1) ? (5,1) (3,4) (2,1) (2,4) (1,5) (6,3) (5,2) (3,3) (6,1) (4,4).



y							
6	H	Q	S	I	A	P	J
5	L	S	D	L	O	C	B
4	S	N	R	X	F	W	F
3	E	A	U	V	N	E	R
2	D	K	G	E	O	W	Q
1	T	B	T	F	M	P	S
	A	Y	C	M	E	Z	G
0		1	2	3	4	5	6

x

B). If you thought the jokes on the last page were bad, wait for these!



1). (0,6) (5,3) (4,6) (6,3) (0,2) (1,3) (1,1) (4,2) (2,3) (2,1) (0,1) (0,6) (4,0)
(4,3) (4,6) (2,3) (6,0) (0,6) (2,1) (1,0) (6,5) (4,6) (1,4) (0,0) (4,3) (1,3) ?
(3,6) (0,1) (5,4) (0,0) (1,5) (2,1) (1,3) (1,2) (5,3) (4,3) (3,6) (1,4) (0,1) (4,5)
(2,0) (2,3) (0,4) (2,1) (4,2) (2,5) (1,0).

2). (5,4) (0,6) (1,3) (2,1) (3,6) (1,5) (0,4) (1,6) (2,3) (0,0) (2,4) (5,3) (4,6) (4,3) (2,5)
(6,0) (6,3) (4,0) (0,3) (1,4) ?
(0,0) (0,2) (3,6) (1,5) (2,2) (2,3) (3,6) (1,5) (0,3) (2,5) (3,5) (4,0) (3,0) (4,2) (4,3).

3). (5,4) (0,6) (1,0) (0,2) (3,6) (2,5) (2,1) (0,6) (4,0) (5,5) (0,6) (3,6) (2,0) (1,2) (3,2) (4,3)
(2,0) (6,3) (4,2) (1,5) (6,1) (0,1) (0,6) (4,0) (5,1) (3,5) (4,6) (1,0) (2,2) (6,3) (4,5) (2,3) (4,3) (0,2) ?
(2,1) (4,2) (6,0) (5,3) (0,1) (2,1) (4,2) (0,1) (0,6) (4,0) (4,5) (2,1) (0,6) (4,0) (6,3)
(0,4) (3,5) (3,6) (0,2) (4,0).

4). (0,6) (4,5) (5,4) (0,2) (4,2) (2,1) (2,3) (6,3) (1,2) (4,0) (1,0) (0,4) (0,2) (0,0) (4,3) (5,5) (5,3) ?
(2,0) (0,6) (3,6) (5,5) (1,2) (0,1) (4,2) (5,5) (0,6) (3,6) (2,0) (1,2).

5). (5,4) (0,6) (1,3) (2,1) (2,5) (4,2) (0,3) (1,5) (0,0) (4,3) (4,0) (2,5) (2,3) (5,5) (4,6) (2,1) (3,2) (2,5)
(4,2) (5,4) (0,5) (6,1) (1,3) (1,0) ? (2,1) (5,4) (3,6) (0,1) (2,1) (4,2) (5,4) (0,6) (4,5) (4,1).

6). (5,2) (0,6) (1,3) (2,1) (3,5) (3,6) (3,3) (5,3) (2,6) (3,6) (4,3) (4,6) (6,0) (2,3) (3,0)
(0,1) (2,4) (4,0) (0,3) ? (1,3) (0,4) (2,1) (3,6) (5,5) (1,2) (3,6) (4,3) (6,1) (5,3) (5,5) (2,1).

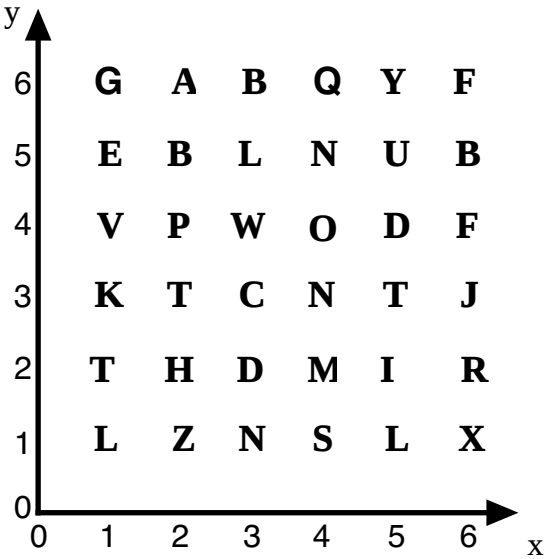
7). (0,6) (4,2) (5,2) (2,5) (4,5) (1,0) (4,2) (2,3) (6,4) (0,5) (0,0) (2,1) (0,1) (4,0) (1,4) (4,6)
(6,0) (0,6) (4,5) (1,5) (2,1) ?
(5,4) (3,6) (0,1) (0,6) (1,3) (0,4) (5,1) (3,6) (2,4) (3,6) (0,1) (3,5) (4,0) (3,3) (5,3) (0,5).

8). (5,4) (1,3) (3,6) (0,1) (0,3) (2,4), (5,2) (0,0) (3,6) (2,1) (4,0) (6,3) (0,1) (0,6) (3,6) (1,5)
(5,5) (4,2) (3,1) (6,4) (5,3) (0,3) (0,1) (0,0) (2,6) (2,1) (5,3) (0,4) (3,5) (3,6) (1,2) (5,3) (3,0) (2,3) (2,5)
(5,2) (4,0) (0,5) (3,5) (3,6) (2,1) (5,2) (1,3) (0,4) (4,2) (4,3) (3,5) (1,0)
(6,0) (2,4) (4,2) (2,3) (1,4) (2,5) (2,1) (0,6) (3,6) (6,1) (3,0) (4,5) (2,4) (4,3) (3,6) (1,4) (6,0).

9). (5,4) (0,6) (1,0) (2,5) (4,2) (6,5) (5,3) (4,0) (0,4) (0,6) (4,6) (3,3) (3,2)
(6,1) (2,1) (3,6) (5,5) (1,2) (1,0) (0,6) (0,0) (3,6) (6,3) ? (6,5) (5,3) (2,0) (1,3) (2,3) (6,1) (4,0)
(4,5) (6,4) (0,1) (0,6) (3,2) (0,6) (4,5) (4,3) (5,3) (1,0) (5,5) (4,2) (3,0) (1,1) (6,1).

Now make up a sheet like this one for your own jokes.

Pop-tastic Coordinates 1.



Do not write on this sheet

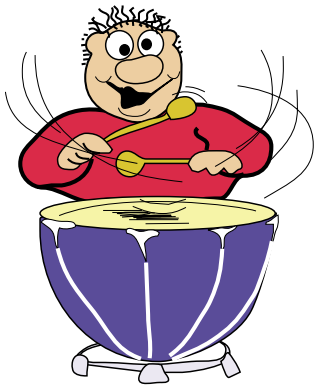
A).

Listed below are some of the number one's from **1963**. Work out the song and the artist.

1). (2,5) (2,6) (3,3) (2,2) (1,5) (3,5) (4,4) (6,2) (6,5) (4,4) (5,6)
(3,3) (1,1) (5,2) (6,4) (6,4) (6,2) (5,2) (3,3) (2,2) (2,6) (6,2) (5,4)

2). (3,2) (2,6) (3,1) (3,3) (1,5) (4,4) (3,1) (5,3) (2,2) (1,5) (4,1) (2,2) (2,6) (3,2) (4,4) (3,4) (4,1)

3). (3,2) (5,2) (2,6) (4,2) (4,4) (4,5) (3,2) (4,1) (6,3) (1,5) (1,2) (2,2) (2,6) (6,2) (6,2) (5,2) (4,1)



4). (3,4) (2,6) (5,6) (3,4) (2,6) (6,2) (3,2) (3,4) (5,2) (4,3) (3,2)
(6,6) (6,2) (2,6) (4,5) (1,3) (5,2) (6,6) (5,2) (1,5) (3,5) (3,2)

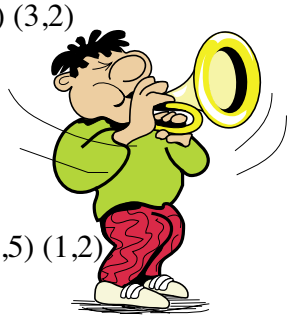
5). (4,1) (5,5) (4,2) (4,2) (1,5) (6,2) (2,2) (4,4) (5,1) (5,2) (3,2) (2,6) (5,6)
(3,3) (1,1) (5,2) (6,4) (6,4) (6,2) (5,2) (3,3) (2,2) (2,6) (6,2) (5,4)

6). (6,4) (4,4) (4,4) (5,3) (5,3) (2,6) (2,4) (2,4) (1,5) (6,2)
(5,3) (2,2) (1,5) (4,1) (2,2) (2,6) (3,2) (4,4) (3,4) (4,1)

7). (2,2)(4,4)(3,4) (3,2)(4,4) (5,6)(4,4)(5,5) (3,2)(4,4) (5,2)(5,3) ? (1,6)(1,5)(6,2)(6,2)(5,6)
(2,6)(4,3)(3,2) (1,2)(2,2)(1,5) (2,4)(2,6)(3,3)(1,5)(4,2)(2,6)(1,3)(1,5)(6,2)(4,1)

8). (6,6) (6,2) (4,4) (4,2) (4,2) (1,5) (5,3) (4,4) (5,6) (4,4) (5,5)
(5,3) (2,2) (1,5) (6,5) (1,5) (2,6) (5,3) (5,1) (1,5) (4,1)

9). (5,2) (5,1) (5,2) (1,3) (1,5) (5,2) (5,3) (1,6) (1,5) (6,2) (6,2) (5,6) (2,6) (4,3) (3,2)
(1,2) (2,2) (1,5) (2,4) (2,6) (3,3) (1,5) (4,2) (2,6) (1,3) (1,5) (6,2) (4,1)



10). (3,2) (1,5) (1,4) (5,2) (3,5) (5,2) (4,5) (3,2) (5,2) (4,1) (1,6) (5,5) (5,2) (4,1) (1,5)
(1,5) (1,1) (1,4) (5,2) (4,1) (2,4) (6,2) (1,5) (4,1) (5,1) (1,5) (5,6)

11). (4,1) (3,4) (1,5) (1,5) (1,2) (4,1) (6,6) (4,4) (6,2) (4,2) (5,6) (4,1) (3,4) (1,5) (1,5) (1,2)
(5,3) (2,2) (1,5) (4,1) (1,5) (2,6) (6,2) (3,3) (2,2) (1,5) (6,2) (4,1)

y							
6	E	Q	S	B	H	O	X
5	R	E	C	L	N	D	B
4	T	J	Z	W	K	E	G
3	S	R	T	C	N	T	P
2	E	W	G	D	A	V	Y
1	N	A	I	U	M	L	F
	L	P	S	O	E	Y	T
0		1	2	3	4	5	6

x

B). Listed below are some of the number one's from **1990**. Work out the song and the artist.

1). (1,2) (5,6) (1,3) (3,5) (3,2) (2,1) (4,3) (4,1) (3,0) (5,3) (2,1) (5,6) (4,3)
(1,5) (4,3) (2,2) (0,0) (1,1) (4,3) (3,2) / (4,5) (4,0) (1,2) (5,6) (0,5) (3,2) (5,4) (1,3)

2). (3,2) (3,1) (3,6) (3,6) (0,6) (2,2) (5,6) (5,6) (3,2) (5,3) (5,6) (4,1) (1,5)
(3,6)(0,2)(1,1)(5,3)(2,6) (2,1)(4,3)(6,0)(5,4)(1,3)(4,5)(1,1)(0,4)(2,1)(5,6)(0,1)(1,1)(5,1)

3). (5,3) (5,4) (1,1) (1,3) (2,0) (5,6) (4,5) (4,1) (6,2) (6,3) (2,1) (3,5) (5,1) (5,6) (1,2)
(4,4) (6,2) (5,1) (2,1) (5,4) (4,1) (2,1) (4,3) (5,6) (2,2) (3,1) (1,5)

4). (5,3) (3,1) (1,3) (2,3) (3,5) (5,4) (1,0) (5,6) (3,4) (5,4) (1,3)
(6,3) (1,1) (1,3) (2,3) (4,3) (5,4) (0,5) (2,6) (2,1) (4,3) (4,4) (1,3) (6,2) (4,1) (5,4)

5). (1,1) (5,1) (2,1) (5,3) (2,3) (3,5) (5,4) (6,0) (2,1) (4,1) (1,5)
(5,3) (4,6) (5,4) (3,6) (1,5) (1,1) (3,1) (5,3) (2,1) (6,1) (3,1) (3,5) (0,3) (5,6) (3,1) (5,3) (4,6)

6). (3,1) (4,3) (3,3) (4,6) (4,2) (2,1) (4,3) (5,4) (3,2) (4,1) (5,4) (5,1) (5,6) (3,2) (5,0)
(5,3)(4,6)(5,4) (1,3)(2,1)(2,2)(4,6)(5,3)(0,2)(5,6)(3,1)(2,6) (6,5)(1,3)(5,6)(2,3)(4,6)(4,0)(1,3)(2,6)

7). (2,1) (2,5) (5,4) (2,1) (3,3) (0,2) (6,5) (4,2) (3,6) (6,2)
(5,2) (1,1) (4,5) (2,1) (5,1) (3,5) (4,2) (2,1) (3,3) (0,6)

8). (5,3) (4,6) (5,4) (6,3) (5,6) (1,2) (1,5) (1,3) (2,6) (4,5) (1,1) (6,3)

9). (5,2) (5,6) (6,4) (3,1) (1,5) (4,1) (4,2) (5,5) (3,0) (4,5) (4,3) (4,2)

10). (4,4) (2,1) (3,5) (5,1) (1,5) (0,5) (1,1) (3,2) (1,1) (4,1) (0,3) (4,4) (2,1)

11). (2,6) (1,1) (3,3) (1,3) (2,1) (6,1) (2,1) (3,3) (4,0)
(1,5) (5,1) (5,3) (3,0) (4,3) (1,4) (5,6) (4,6) (4,3)

12). (2,6) (1,1) (5,2) (2,1) (5,6) (3,1) (1,3) (2,6) (5,5) (4,2) (6,2)
(3,3) (0,0) (2,1) (6,1) (6,1) (1,3) (2,1) (3,3) (4,6) (4,2) (1,3) (3,2)

Try making one up for yourself for **this years** charts.

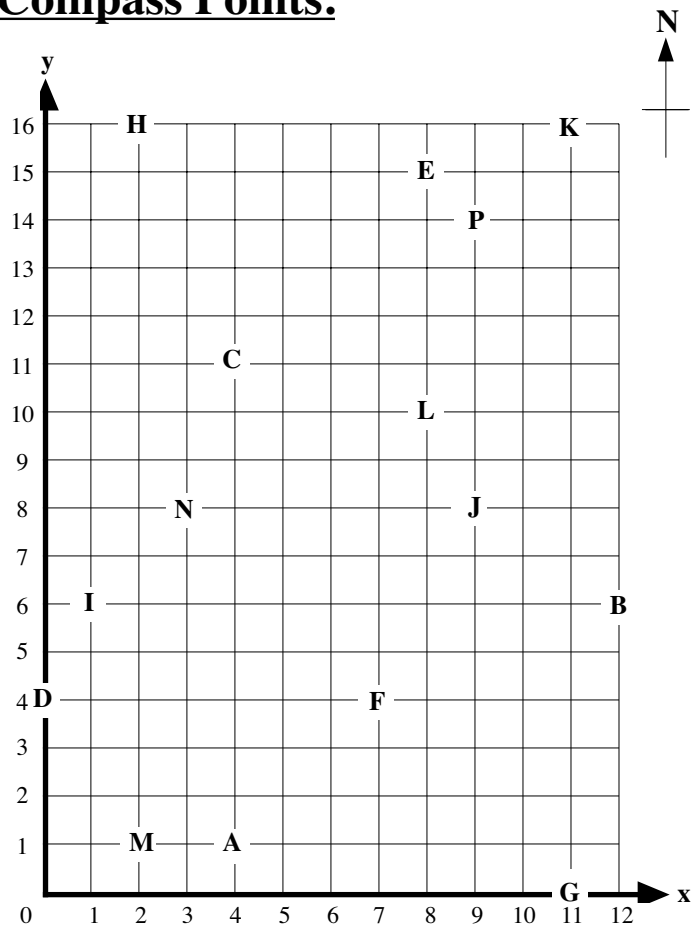
Crazy Co-ordinates 1

Draw a picture on the first grid.
Now transfer it to the other grid.

Crazy Co-ordinates 2

Draw a picture on the first grid.
Now transfer it to the other grid.

Coordinates and Compass Points.



Copy this grid and mark on all the points shown.

1). Write down the coordinate for each of the following points

i).	A	ii).	B
iii).	C	iv).	D
v).	E	vi).	F
vii).	G	viii).	H
ix).	I	x).	J
xi).	K	xii).	L
xiii).	M	xiv).	N
xv).	P		

2). Write down the coordinate of where you end up if you start at

i). A and go 3 squares North,
ii). P and go 9 squares South,
iii). B and go 10 squares West,
iv). M and go 4 squares East,
v). L and go across 3 squares Northeast,
vi). C and go across 7 squares Southeast,
vii). A and go across 4 squares Northwest,
viii). L and go across 2 squares Southwest.

3). Write down the letter you end up at if you start at

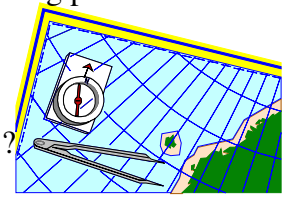
i). (12,4) and go 5 squares West,
ii). (4,5) and go 6 squares North,
iii). (3,14) and go 6 squares East,
iv). (7,15) and go 11 squares South,
v). (5,13) and go across 7 squares Southeast,
vi). (3,10) and go across 5 squares Northeast,
vii). (12,11) and go across 4 squares Northwest,
viii). (11,8) and go across 7 squares Southwest.

4). Write down the direction you travel in and the number of squares you go across if you go

i).	from (6,1) to (12,7),	ii).	from A to C,	iii).	from K to H,
iv).	from (0,10) to (5,5),	v).	from H to L,	vi).	from P to E,
vii).	from (10,13) to (4,7),	viii).	from F to N,	ix).	from J to P,
x).	from (1,13) to (7,13),	xi).	from I to K,	xii).	from (6,15) to (11,10),
xiii).	from G to F,	xiv).	from (12,1) to (5,8),	xv).	from (0,5) to (5,0).

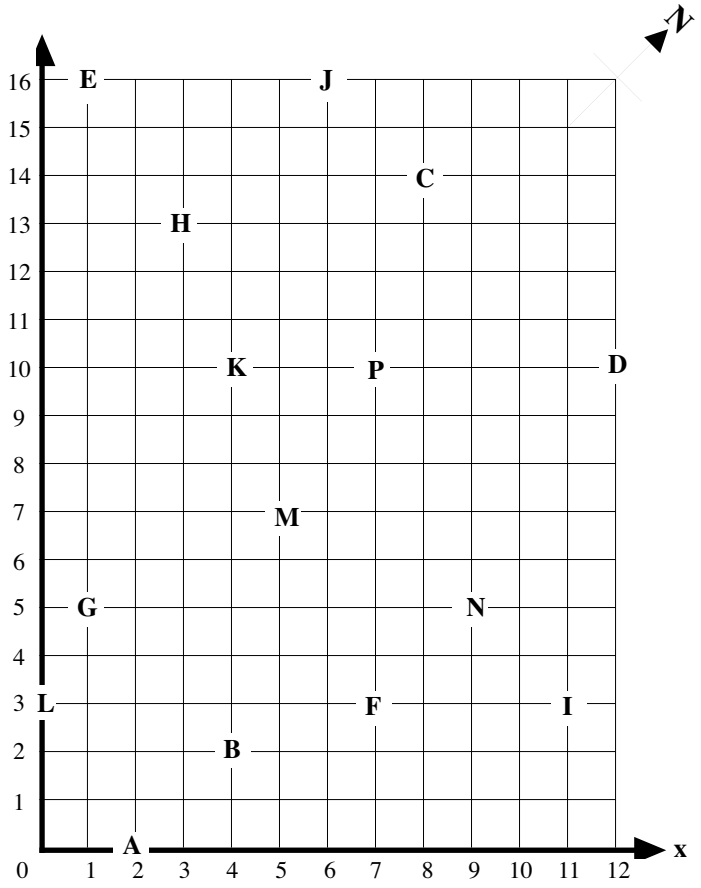
5). On your grid draw each of the trails below.
Then draw the line that takes you back to the starting point.
Give the direction and number of squares travelled over to get back to the starting point.

i). (2,2) to (4,7) to (6,2). What is the name of this shape ?
ii). (9,3) to (6,6) to (9,9) to (12,6). What is the name of this shape ?
iii). (2,12) to (6,11) to (6,14) to (2,15). What is the name of this shape ?



Copy this grid and mark on all the points shown.

Notice now the new position of North.



6). Write down the coordinate for each of the following points

i). A ii). B
iii). C iv). D
v). E vi). F
vii). G viii). H
ix). I x). J
xi). K xii). L
xiii). M xiv). N
xv). P

7). Write down the coordinate where you end up if you start at
i). P and go across 5 squares North,
ii). M and go across 4 squares South,
iii). F and go across 7 squares West,
iv). C and go across 2 squares East,
v). H and go 6 squares Northeast,
vi). G and go 1 square Southeast,
vii). D and go 4 squares Northwest,
viii). A and go 2 squares Southwest.

8). Write down the letter you end up at if you start at

i). (10,4) and go across 6 squares West,
ii). (6,4) and go across 6 squares North,
iii). (1,11) and go across 4 squares East,
iv). (11,7) and go across 4 squares South,
v). (4,16) and go 14 squares Southeast,
vi). (0,7) and go 5 squares Northeast,
vii). (4,0) and go 10 squares Northwest,
viii). (9,3) and go 2 squares Southwest.

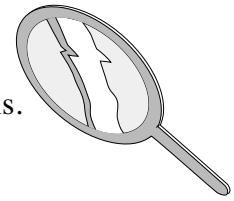
9). Write down the direction you travel in and the number of squares you go across if you go

i). from (7,0) to (0,7),
ii). from P to K,
iii). from C to D,
iv). from (6,7) to (12,13),
v). from B to A,
vi). from D to K,
vii). from (1, 9) to (10,9),
viii). from P to E,
ix). from K to B,
x). from (12,6) to (6,0),
xi). from L to I,
xii). from (10,3) to (10,15),
xiii). from L to P,
xiv). from (12,1) to (0,13),
xv). from (1,15) to (11,5).

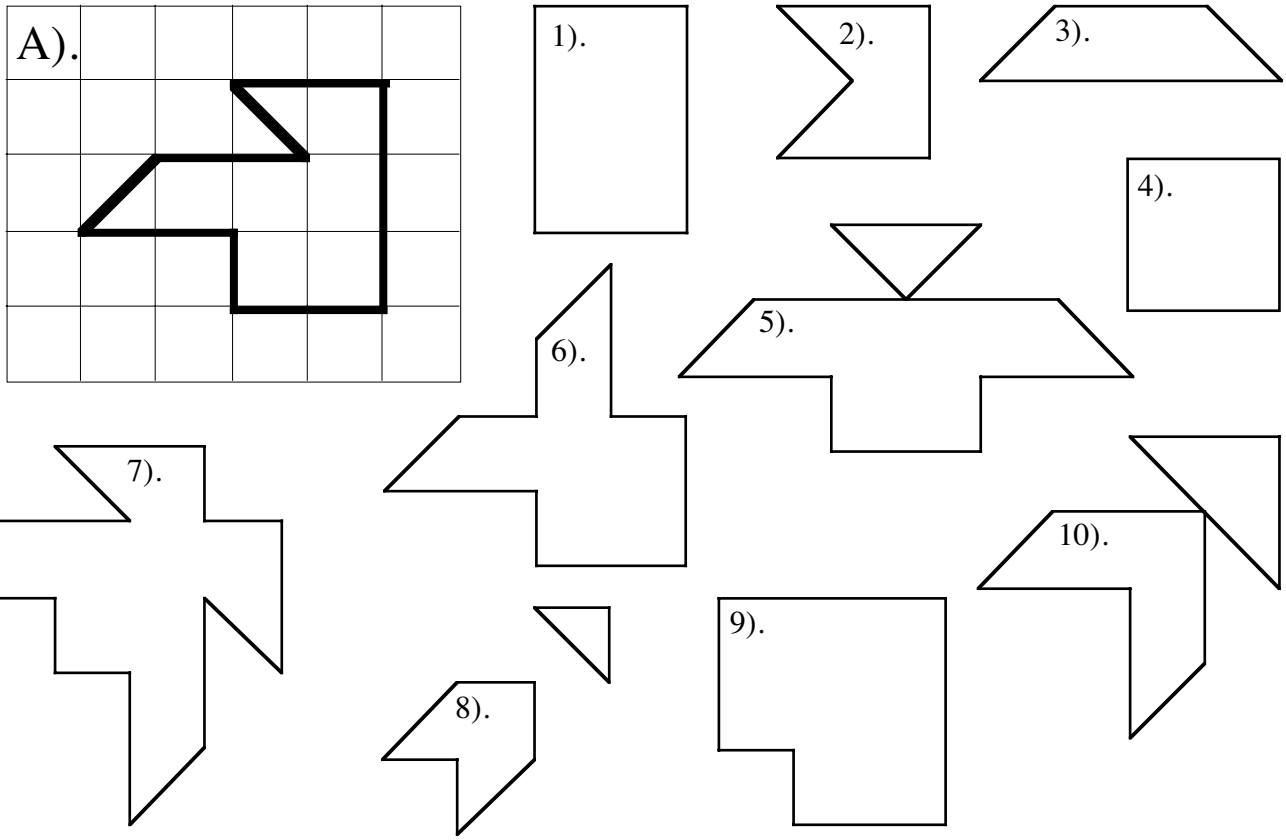
10). On your grid draw each of the trails below.
Then draw the line that takes you back to the starting point.
Give the direction and number of squares travelled over to get back to the starting point.

i). (10,4) to (5,1) to (10,1). What is the name of this shape ?
ii). (4,6) to (9,11) to (11,9) to (6,4). What is the name of this shape ?
iii). (2,13) to (4,11) to (2,6) to (0,11). What is the name of this shape ?
iv). (10,12) to (11,14) to (9,16) to (7,14) to (8,12). What is the name of this shape ?

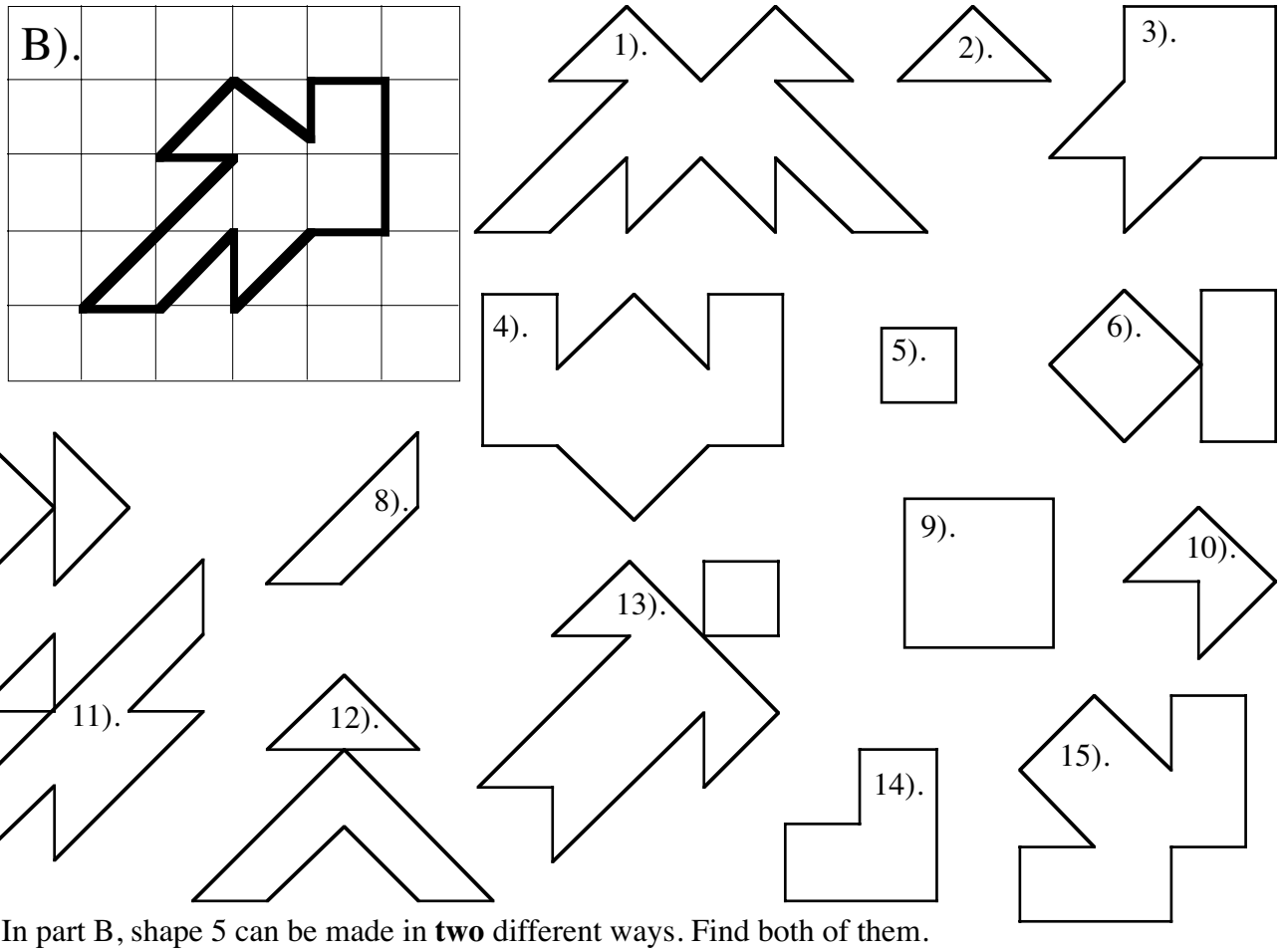
Finding Mirror Lines.



The following shapes can be found by placing a mirror on the picture.
Try to predict where the mirror must be placed, then use a mirror to check this.
Draw the original diagram on squared paper for each question.
Mark on the position of the mirror that makes the shape appear.
Draw an arrow on the mirror to show which side it is viewed from.

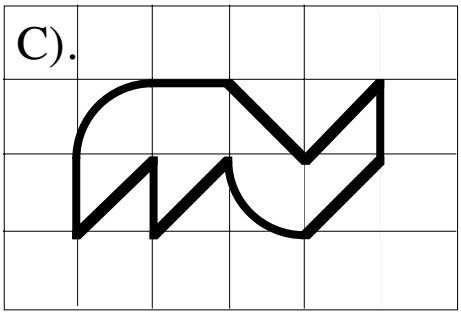


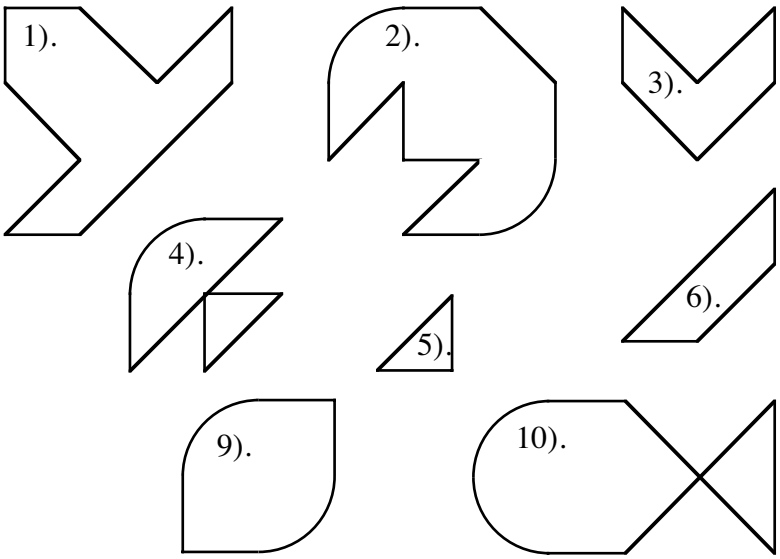
In part A, shape 4 can be made in **three** different ways. Find all three.

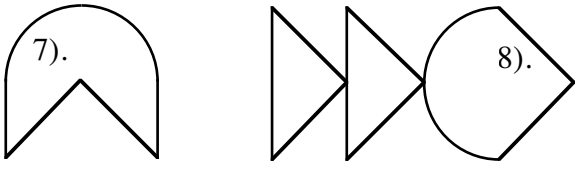


In part B, shape 5 can be made in **two** different ways. Find both of them.

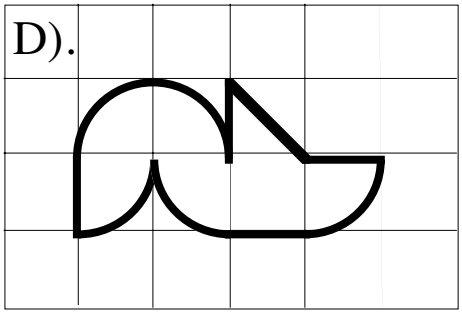
C).

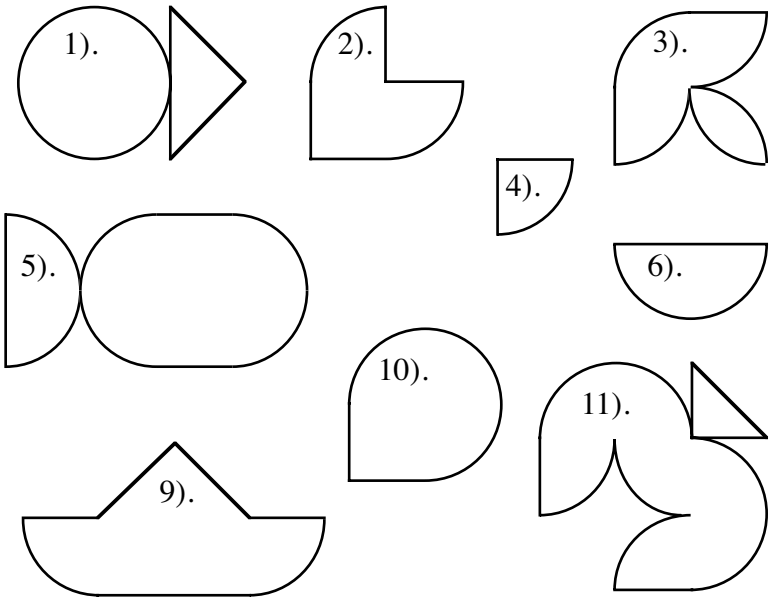


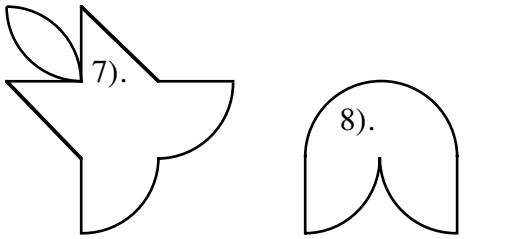




D).

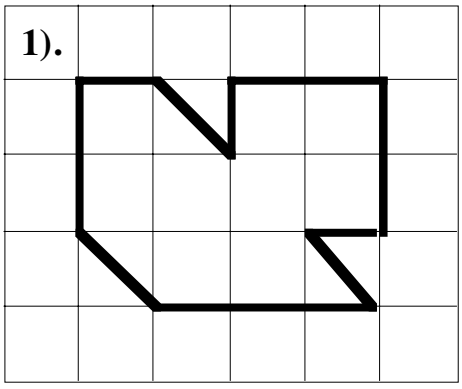




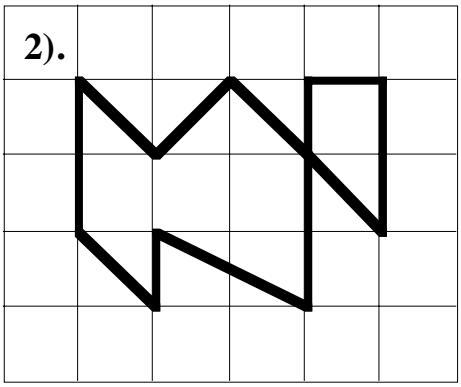


E). Copy the diagrams onto squared paper, one side for **each** diagram.
In the rest of the space make up your own worksheet like this one for your neighbour.

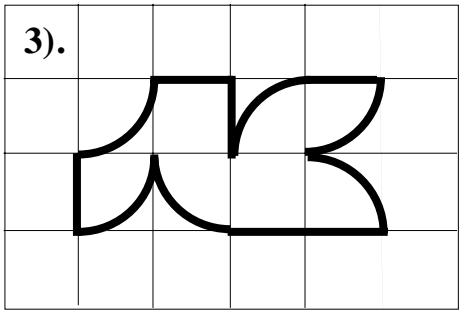
1).



2).



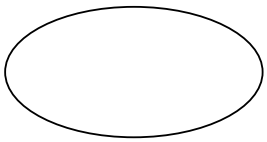
3).

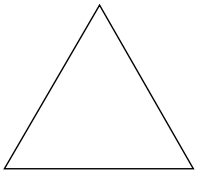


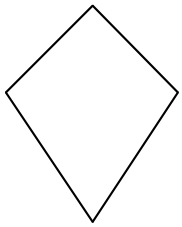
Line Symmetry.

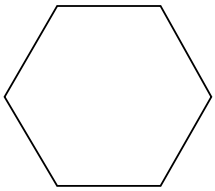
Copy each diagram into your book.
Under each diagram write if the shape has **line symmetry** or **no line symmetry**.
If it **has** line symmetry draw on the lines of symmetry.

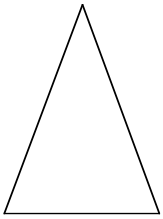
Geometrical Shapes.

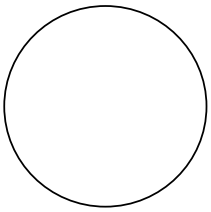
1). 

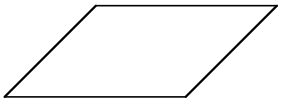
2). 

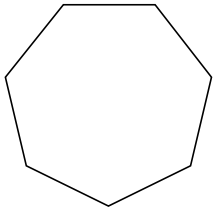
3). 

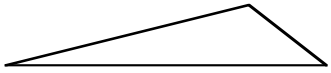
4). 

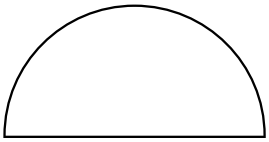
5). 

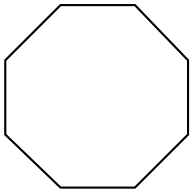
6). 

7). 

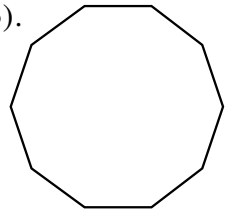
8). 

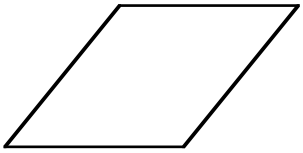
9). 

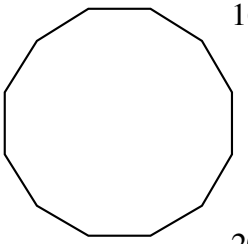
10). 

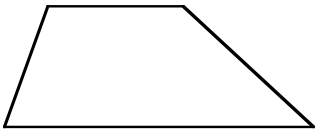
11). 

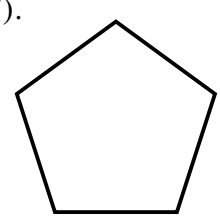
12). 

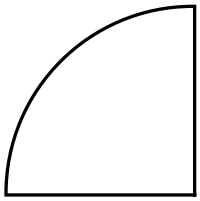
13). 

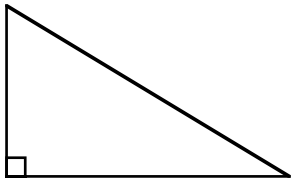
14). 

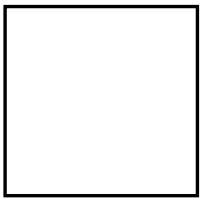
15). 

16). 

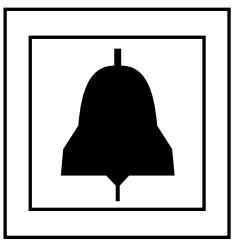
17). 

18). 

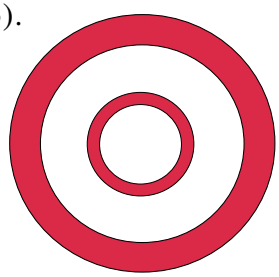
19). 

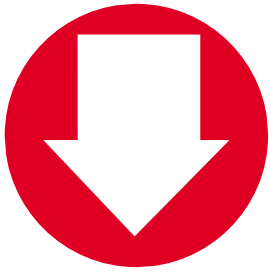
20). 

Other Shapes.

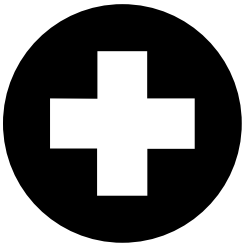
1). 

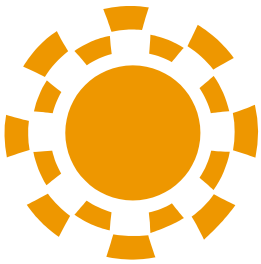
2). 

3). 

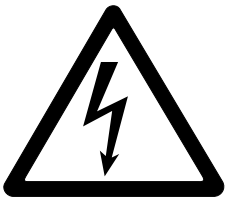
4). 

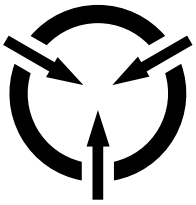
5). 

6). 

7). 

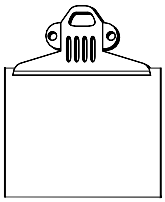
8). 

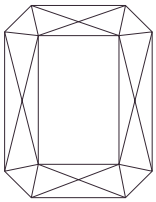
9). 

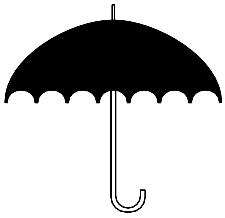
10). 

11). 

12). 

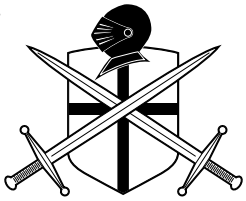
13). 

14). 

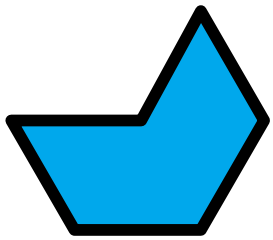
15). 

16). 

17). 

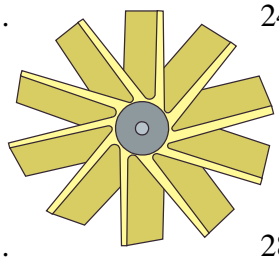
18). 

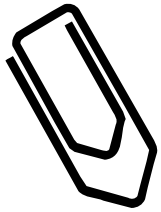
19). 

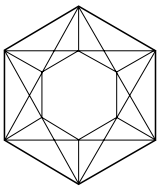
20). 

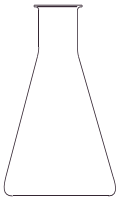
21). 

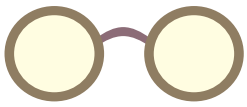
22). 

23). 

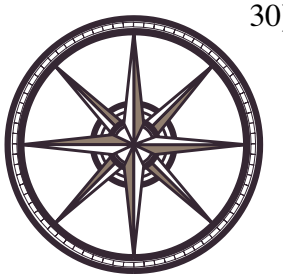
24). 

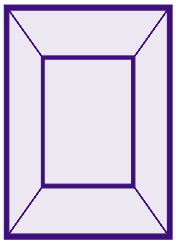
25). 

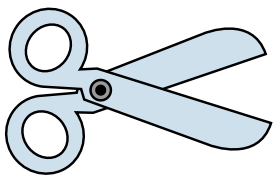
26). 

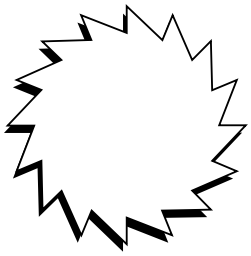
27). 

28). 

29). 

30). 

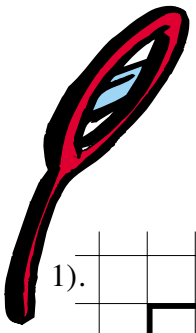
31). 

32). 

33). Now make up a logo or road sign of your own which has

a). 1 line of symmetry ; b). 2 lines of symmetry.

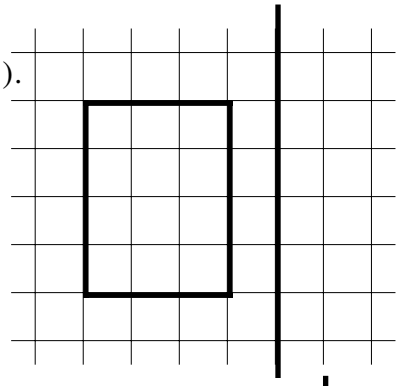
34). Look in any newspaper or magazine and find some logos or pictures that have line symmetry. Cut them out and stick them in your book.



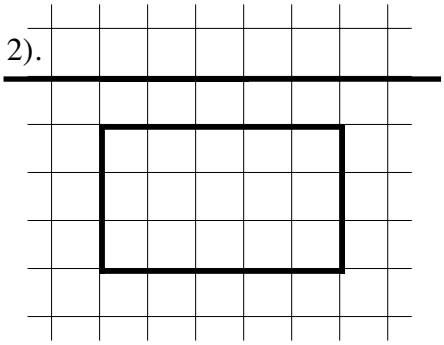
Mirror Line Symmetry (One Line).

Copy the following diagrams onto squared paper.
Draw the reflection of each object.
Make sure you leave enough space to draw the images.

1).



2).



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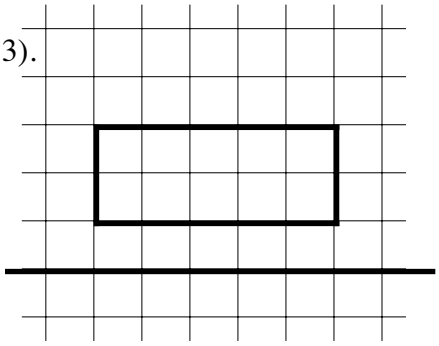

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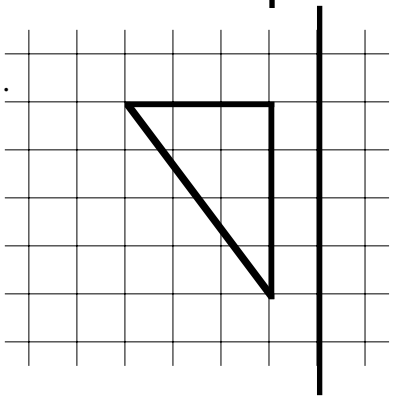

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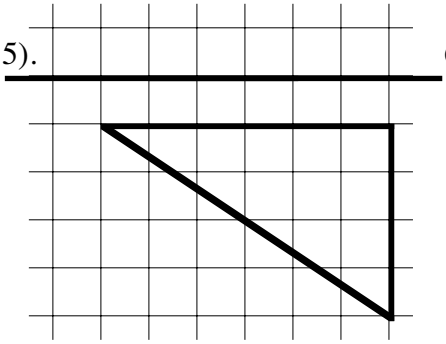

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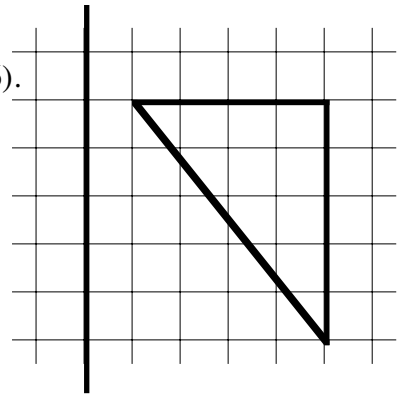

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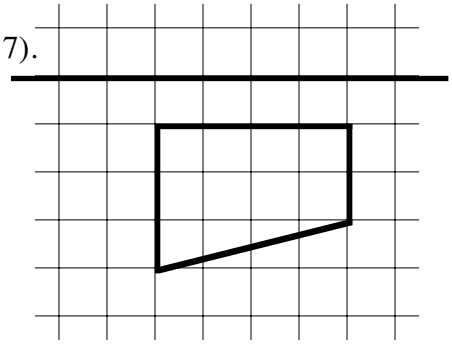

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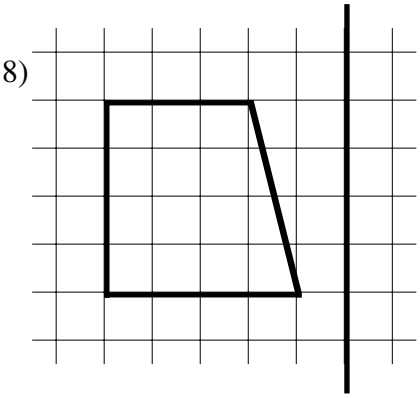

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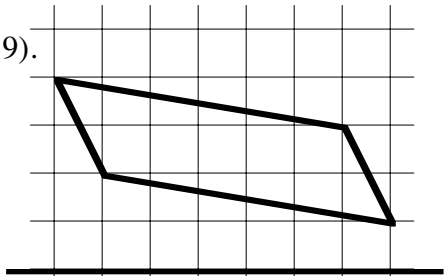

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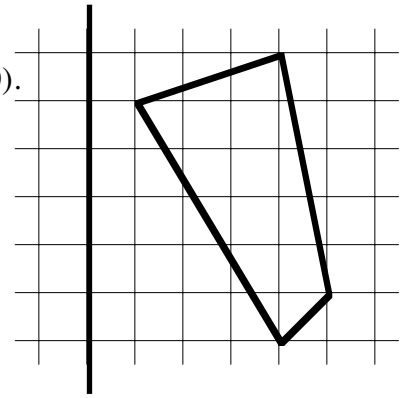

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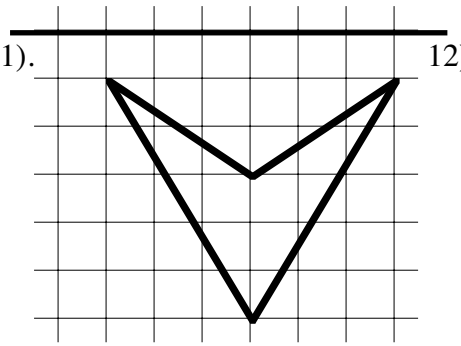

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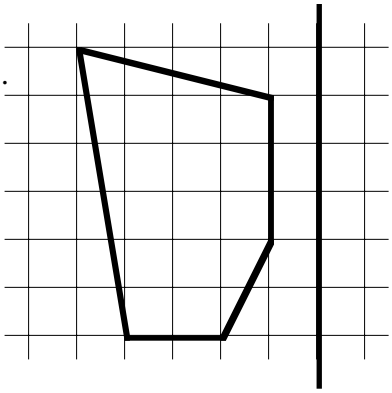

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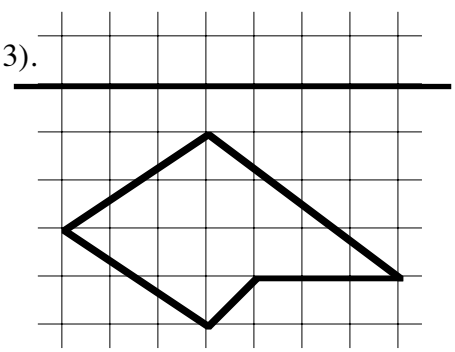

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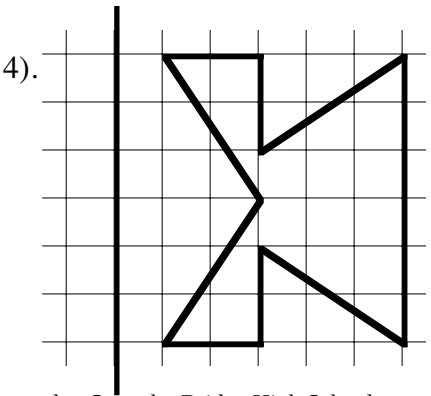

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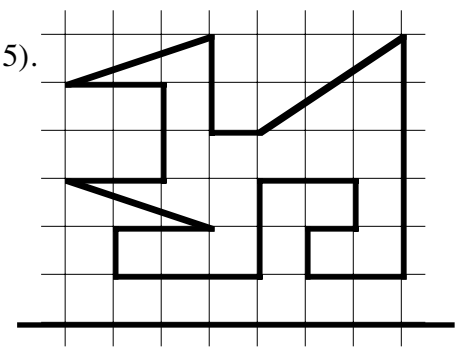

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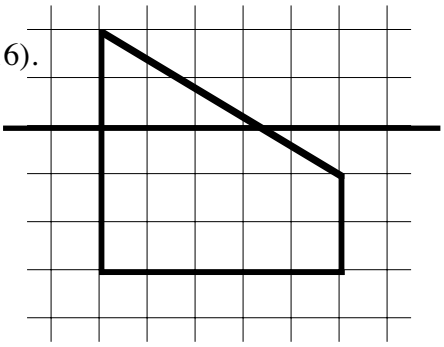

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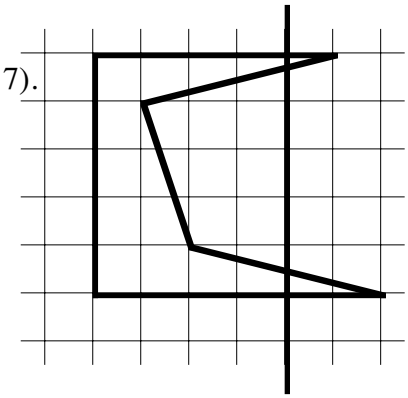

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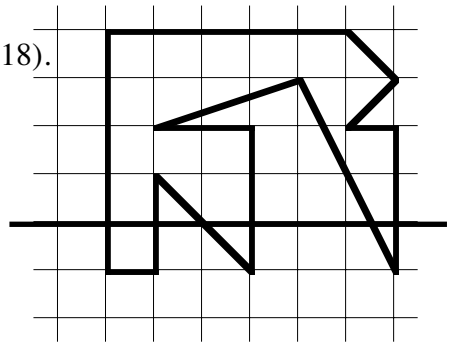

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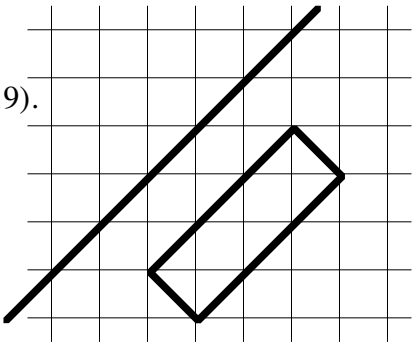

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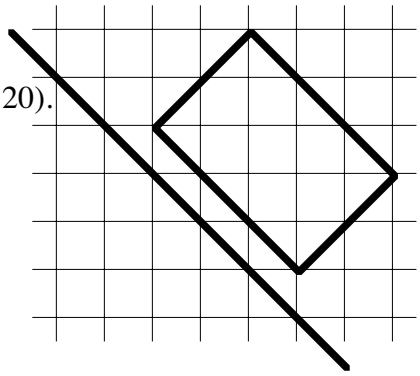

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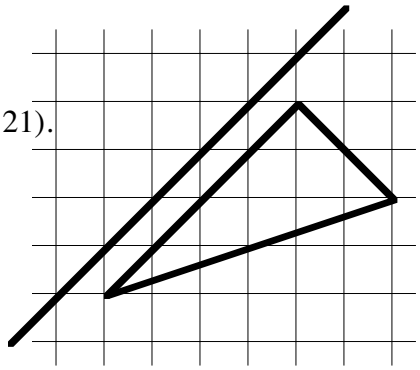

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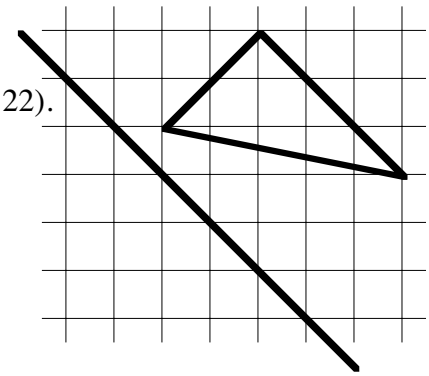

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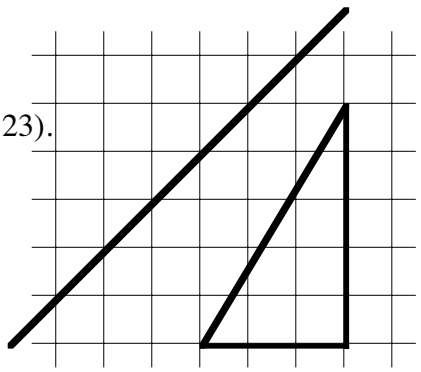

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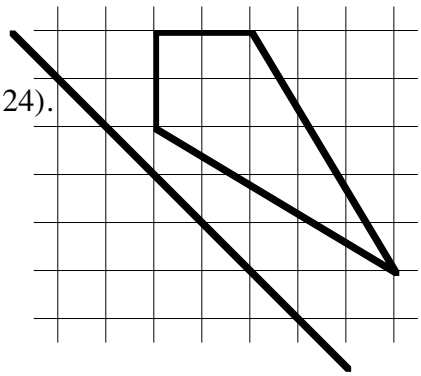

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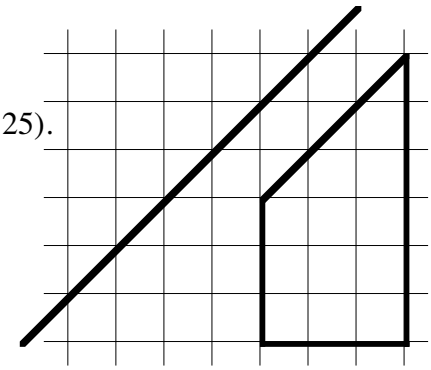

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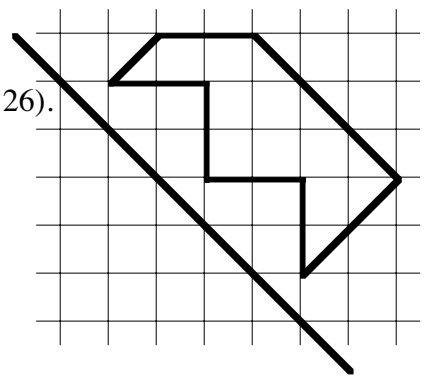

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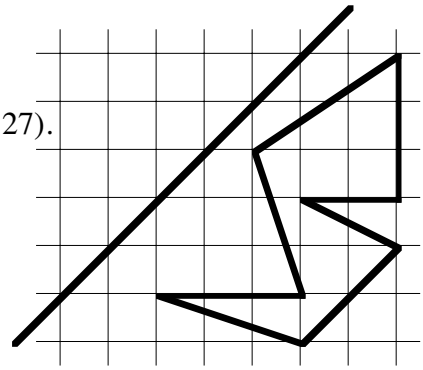

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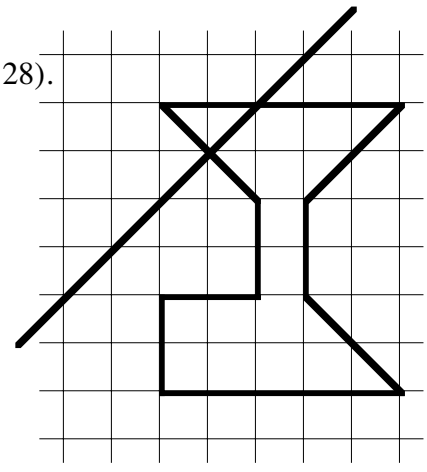

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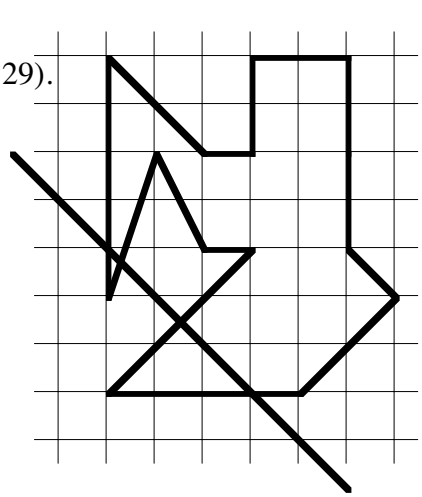

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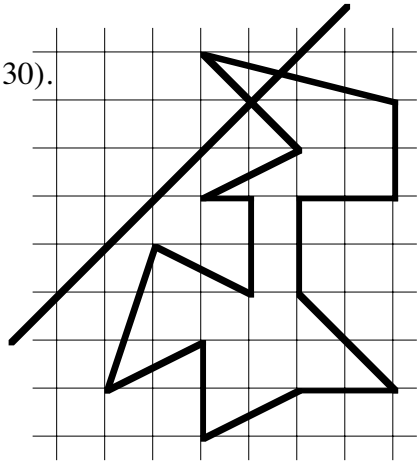
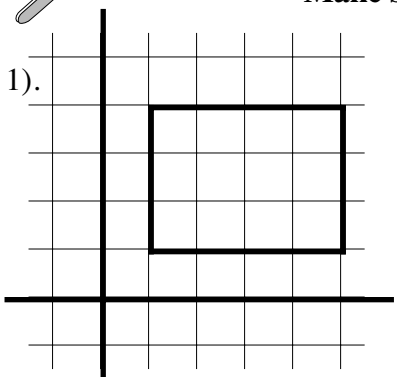


Two Lines of Symmetry and More!

Copy the following diagrams onto squared paper.
Draw the reflections in each mirror line.
Make sure you leave enough space to draw the images.

1).



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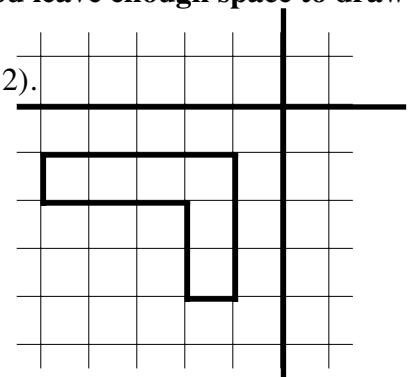

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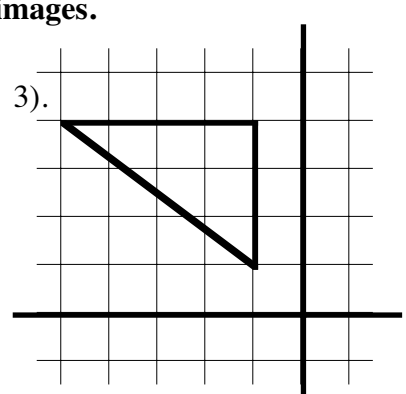

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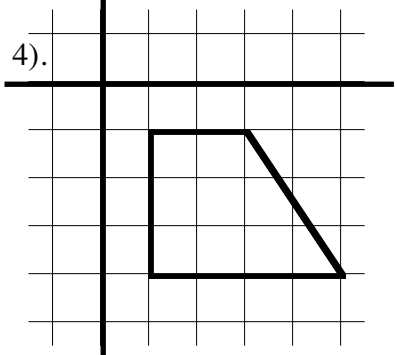
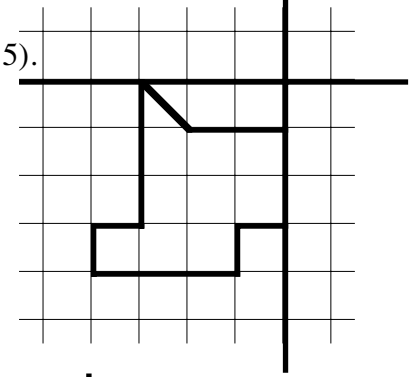


5).



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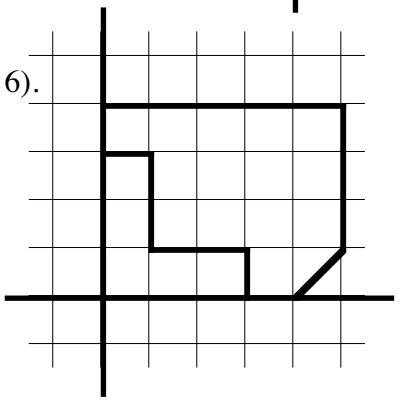

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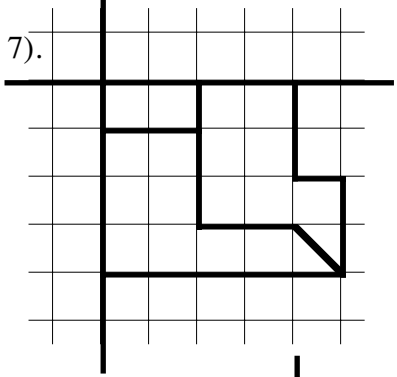

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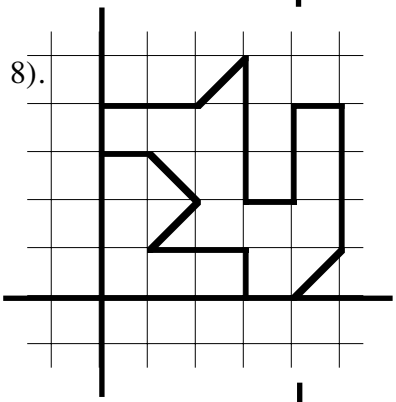

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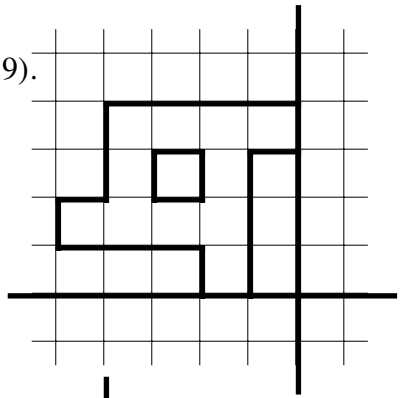

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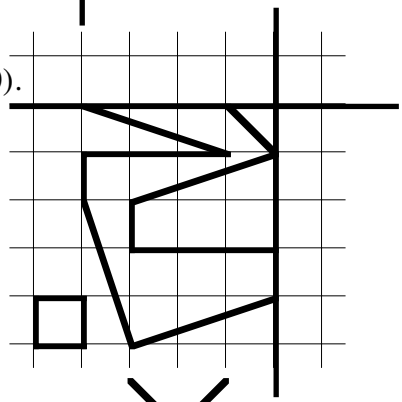

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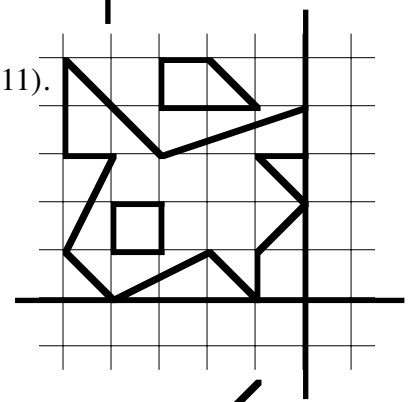

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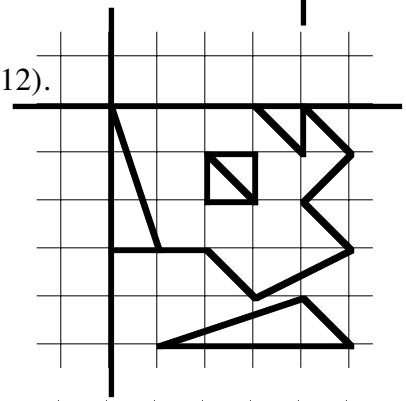

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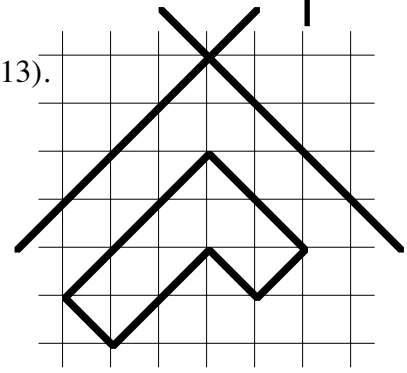

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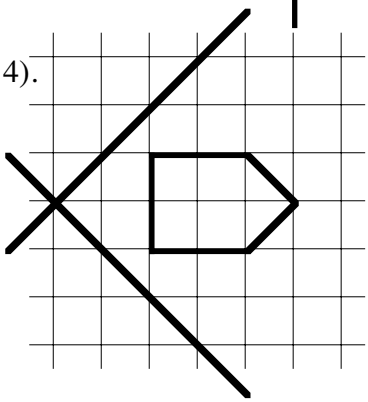

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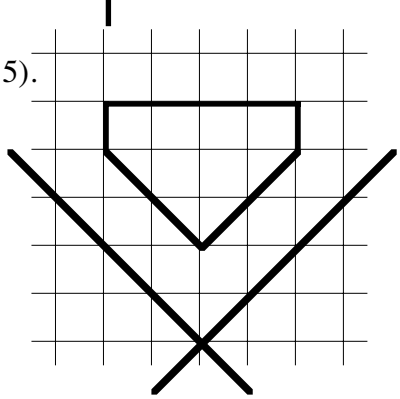

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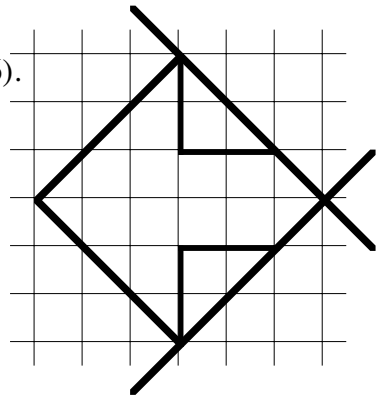
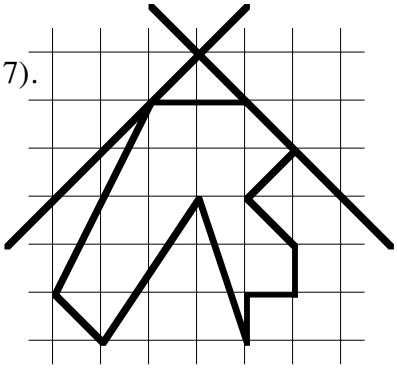


17).



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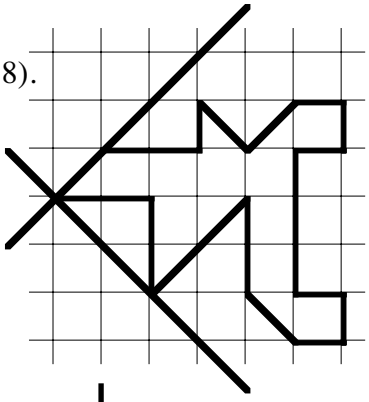

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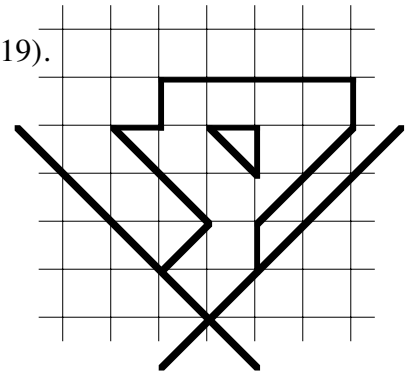

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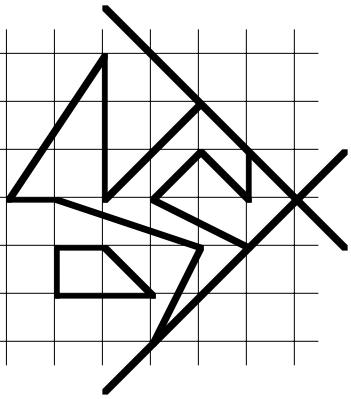

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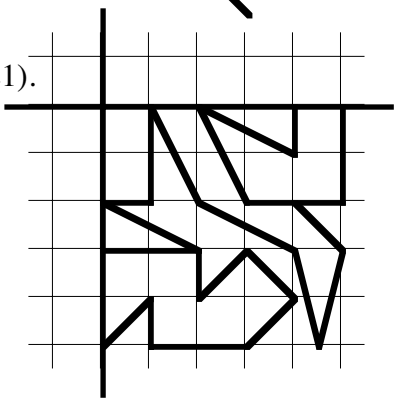
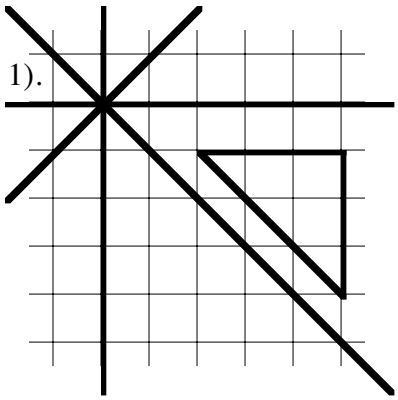
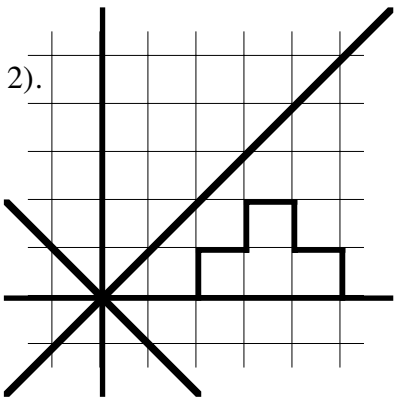


Four Lines of Symmetry.

1).



2).



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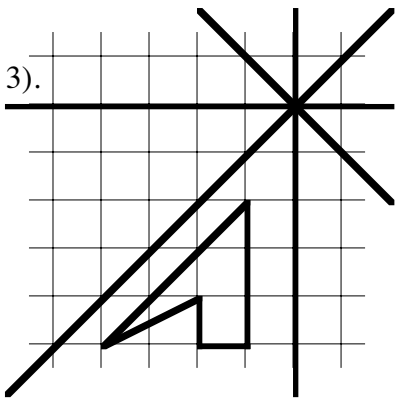
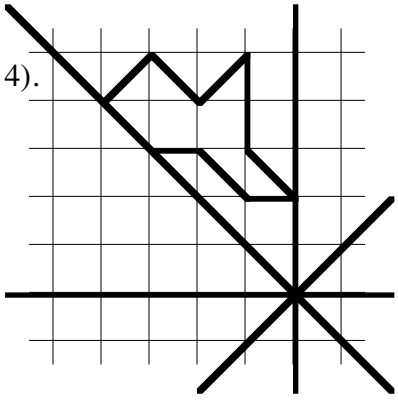


4).



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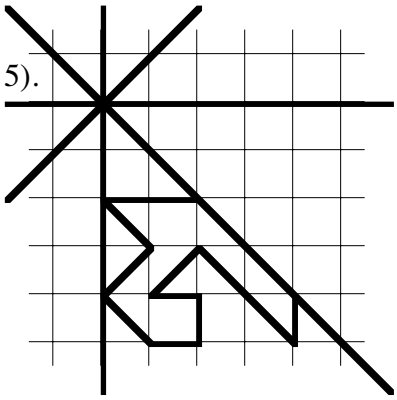

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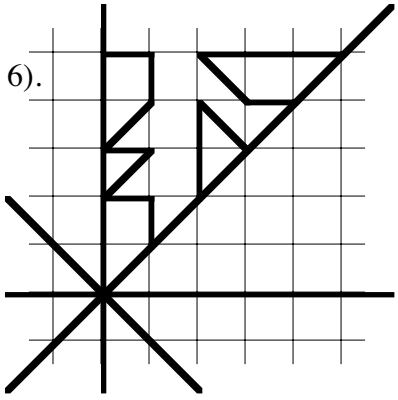

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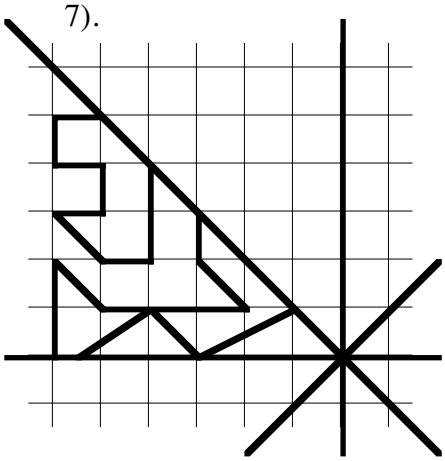

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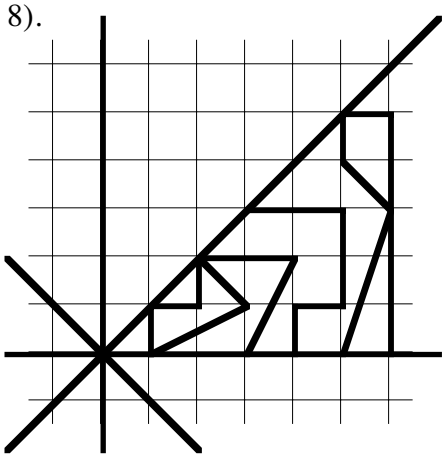

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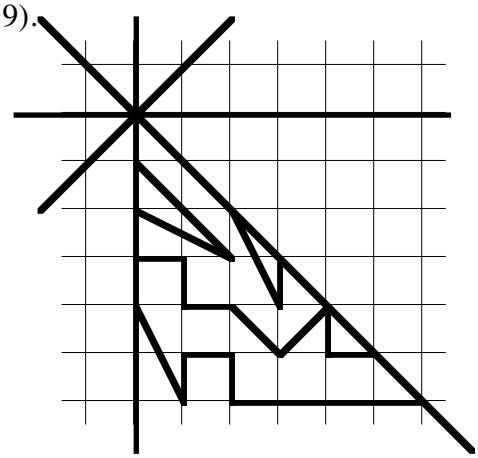
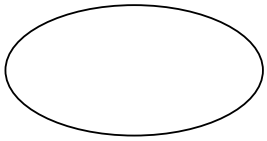
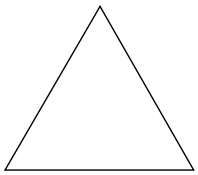


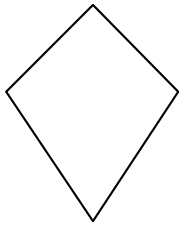
Rotational Symmetry.

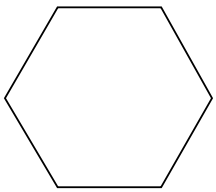
Copy each diagram into your book.
Under each diagram write if the shape has **rotational symmetry** or **no rotational symmetry**.
If it **has** rotational symmetry say of what **order** it is.

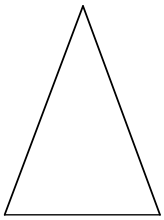
Geometrical Shapes.

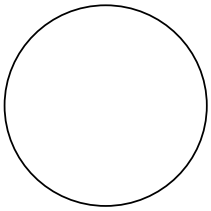
1). 

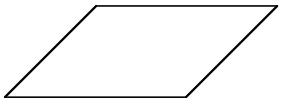
2). 

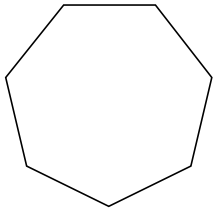
3). 

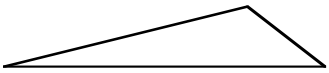
4). 

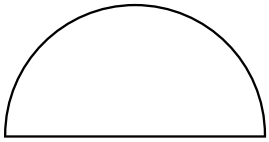
5). 

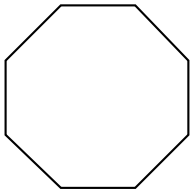
6). 

7). 

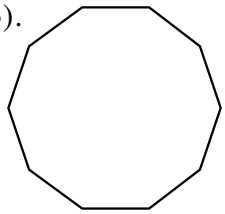
8). 

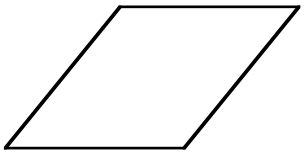
9). 

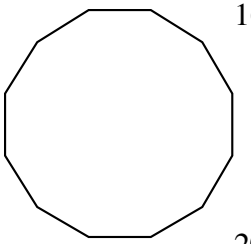
10). 

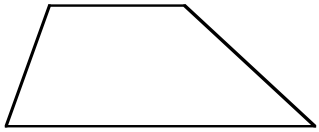
11). 

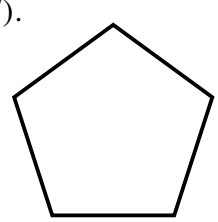
12). 

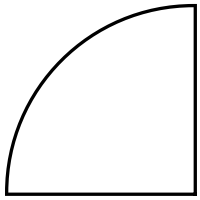
13). 

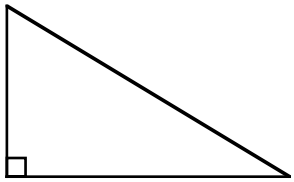
14). 

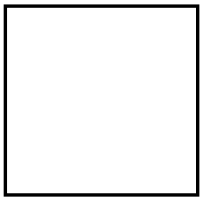
15). 

16). 

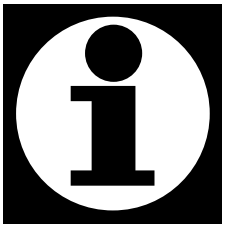
17). 

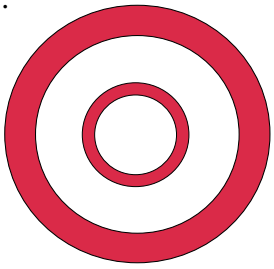
18). 

19). 

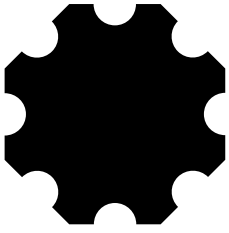
20). 

Other Shapes.

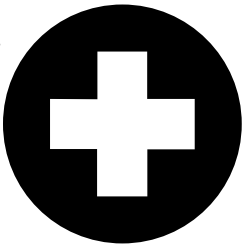
1). 

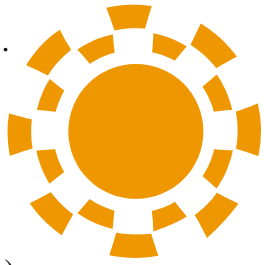
2). 

3). 

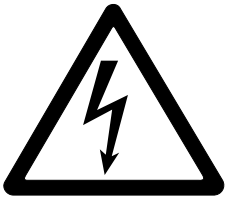
4). 

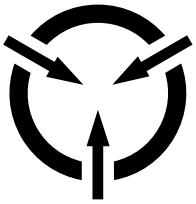
5). 

6). 

7). 

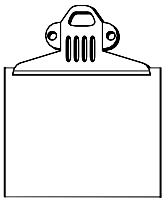
8). 

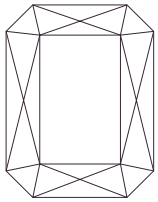
9). 

10). 

11). 

12). 

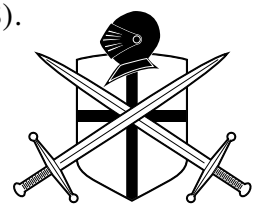
13). 

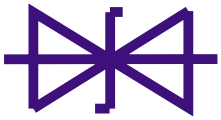
14). 

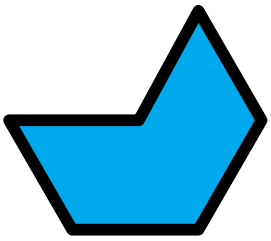
15). 

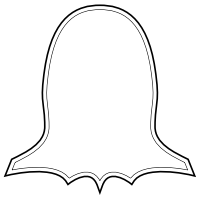
16). 

17). 

18). 

19). 

20). 

21). 

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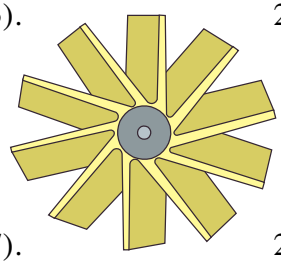
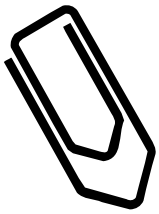
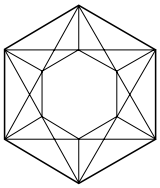
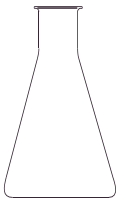
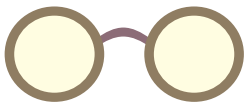
23). 

24). 

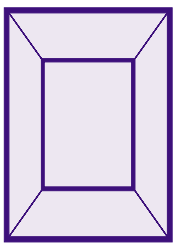
25). 

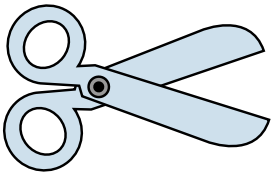
26). 

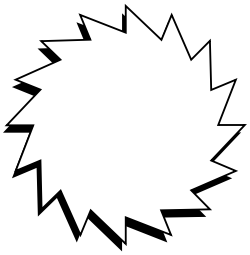
27). 

28). 

29). 

30). 

31). 

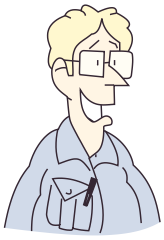
32). 

33). Now make up a logo or road sign of your own which has rotational symmetry
a). order 2; b). order 3; c). order 4.

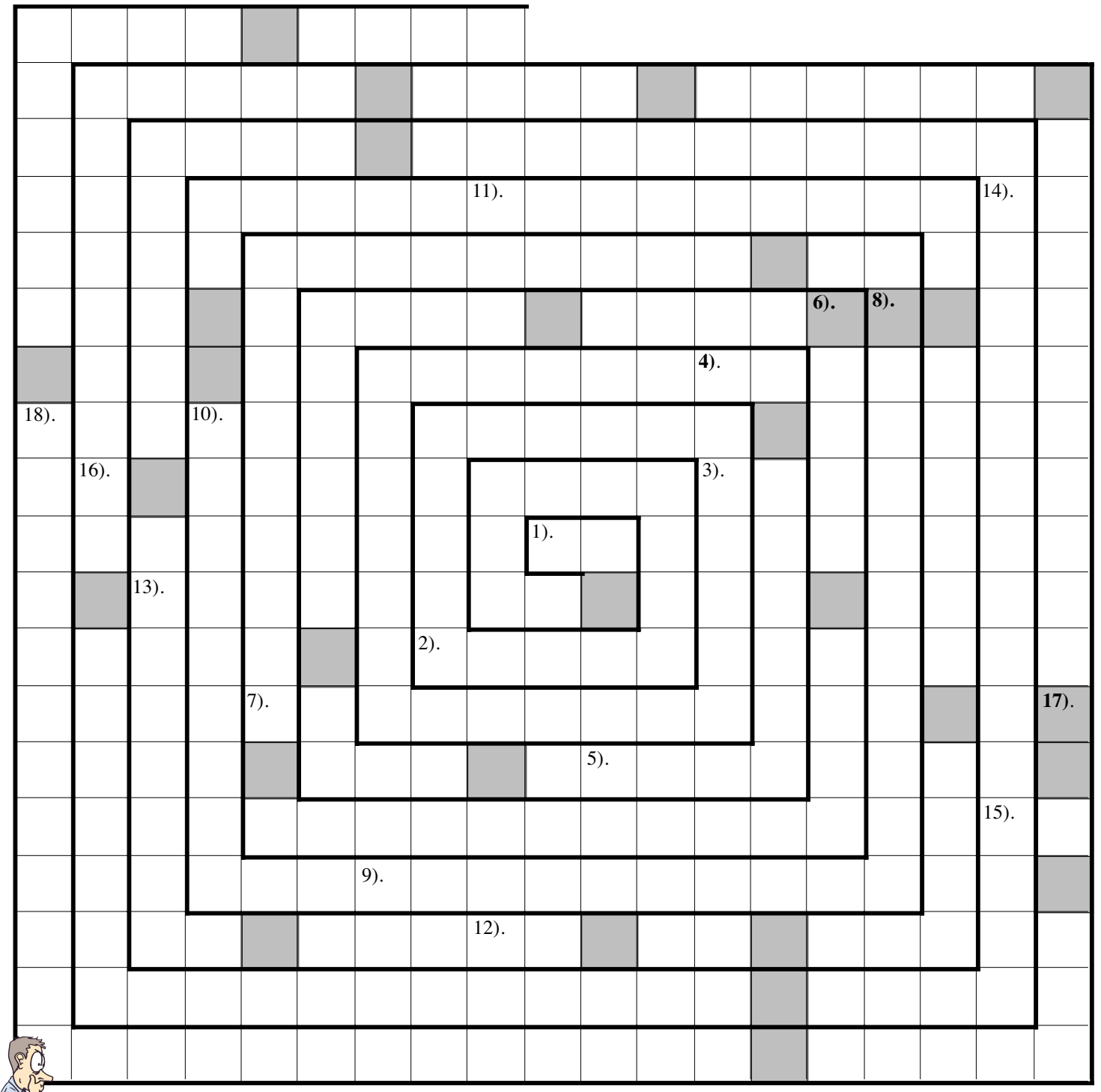
34). Look in any newspaper or magazine and find some logos or pictures that have rotational symmetry. Cut them out and stick them in your book.

Spiralling Sums 1 (Addition/Subtraction).

Work out and then write in the answers to the following calculations.

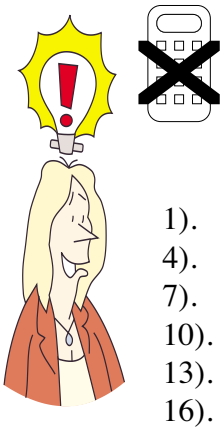


1).	47 + 59 = _____	2).	157 - 73 = _____	3).	86 + 45 = _____
4).	92 - 18 = _____	5).	57 + 139 = _____	6).	212 - 60 = _____
7).	140 + 220 = _____	8).	1000 - 440 = _____	9).	37 + 46 = _____
10).	102 - 53 = _____	11).	606 + 700 = _____	12).	1300 - 500 = _____
13).	73 + 54 = _____	14).	146 - 67 = _____	15).	602 + 1800 = _____
16).	2400 - 401 = _____	17).	642 + 537 = _____	18).	300 - 94 = _____



19). Start at the centre of the spiral and write the answers in words in the appropriate places.

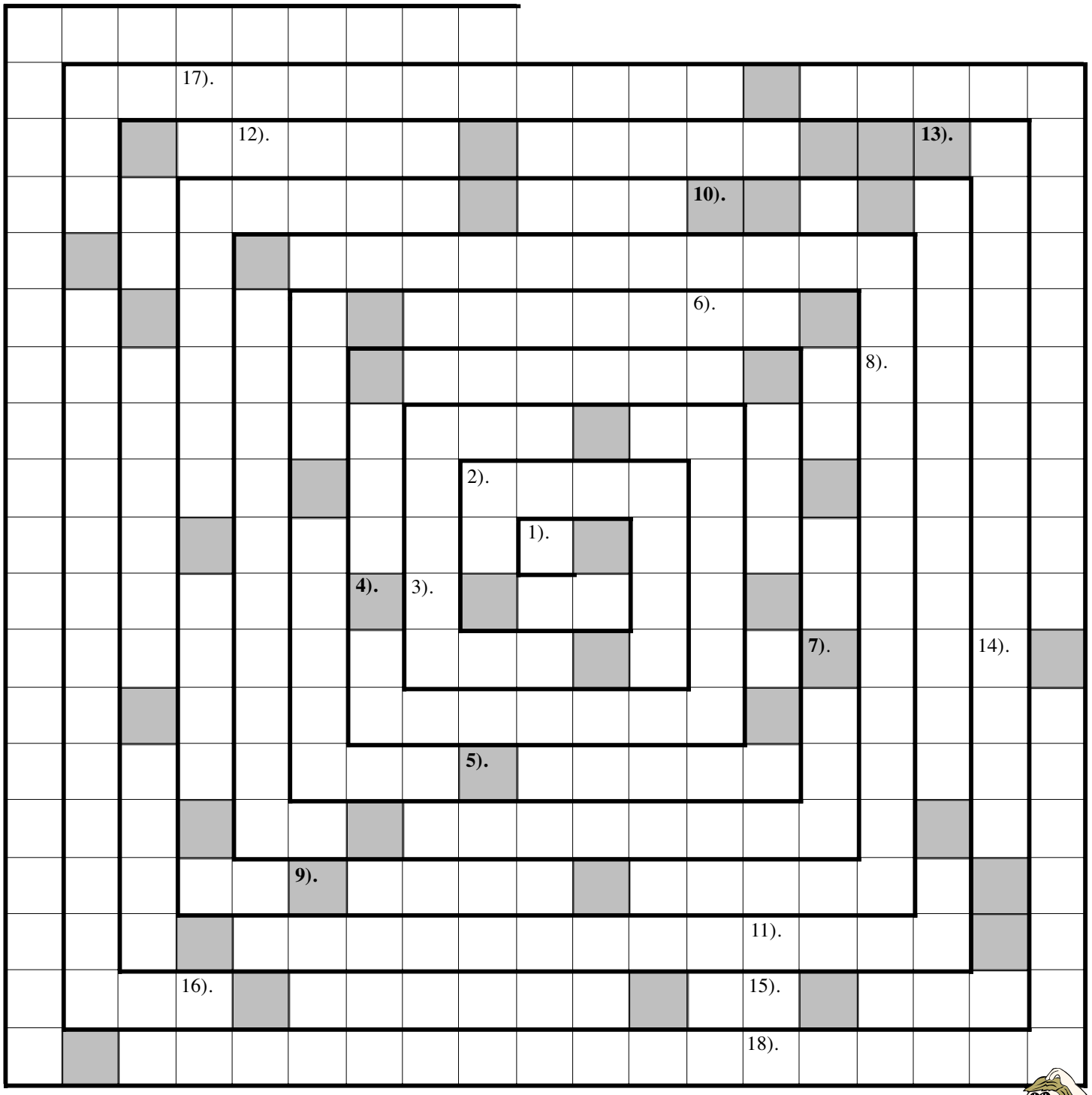
20). Hidden in the spiral are **three** mystery football teams. To find the teams read off the letters in the shaded squares starting at the centre of the spiral.



Spiralling Sums 2 (Addition/Subtraction).

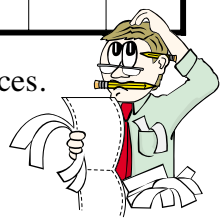
Work out and then write in the answers to the following calculations.

1).	100 - 89 = _____	2).	26 + 61 = _____	3).	220 - 107 = _____
4).	230 + 404 = _____	5).	1000 - 194 = _____	6).	95 - 49 = _____
7).	9400 -1111 = _____	8).	104 + 107 = _____	9).	700 - 16 = _____
10).	480 + 31 = _____	11).	2000 - 894 = _____	12).	550 + 250 = _____
13).	91 - 28 = _____	14).	37 + 63 = _____	15).	146 - 122 = _____
16).	1900 + 111 = _____	17).	1247+2300 = _____	18).	4070+3308 = _____

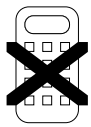


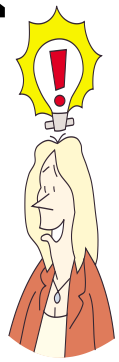
19). Start at the centre of the spiral and write the answers in words in the appropriate places.

20). Hidden in the spiral are **four** mystery football teams. To find the teams read off the letters in the shaded squares starting at the centre of the spiral.



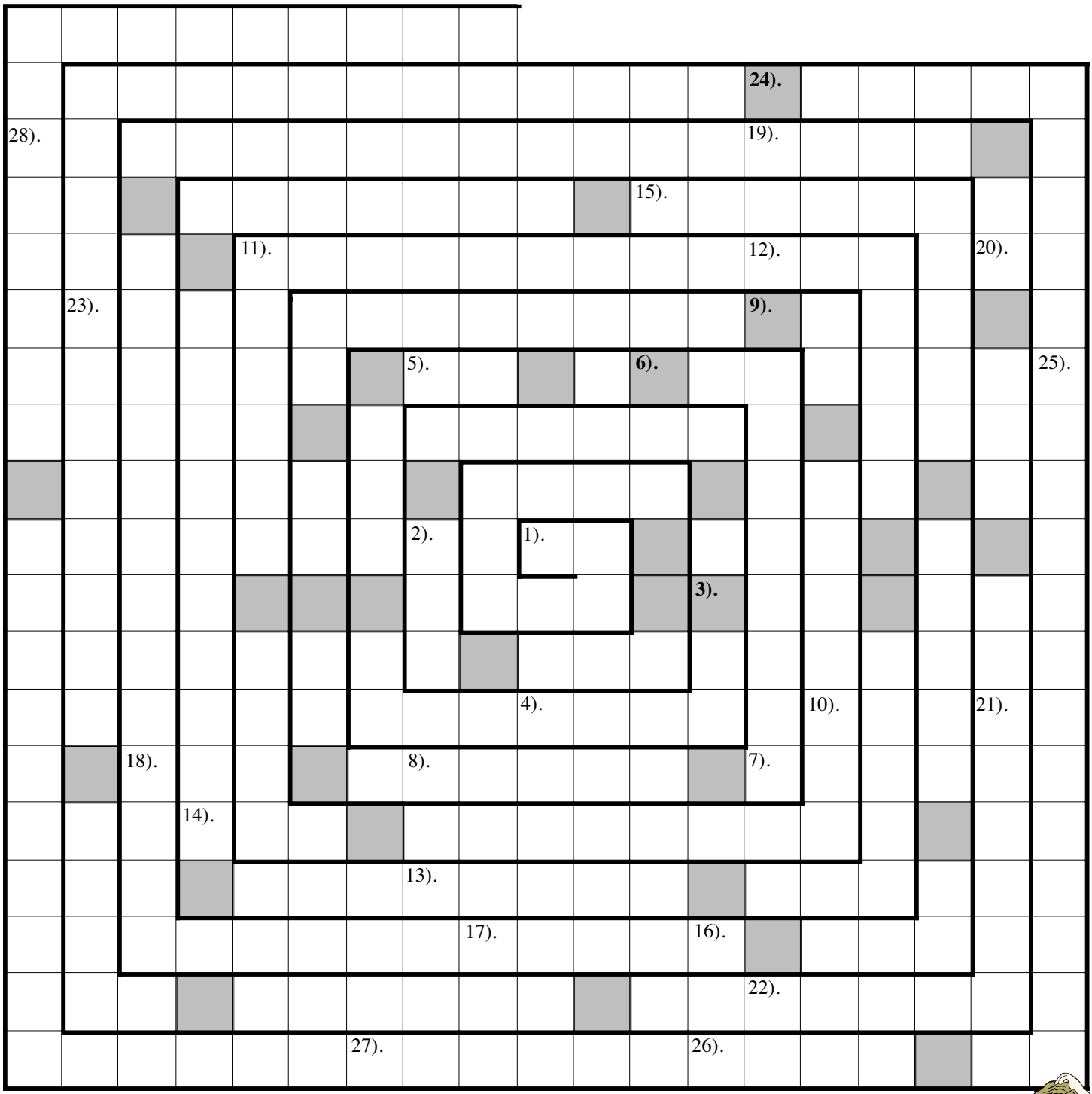
Spiralling Sums 1 (Multiplication/Division).





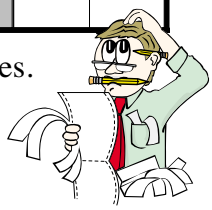
Work out and then write in the answers to the following calculations.

1). 12 x 9 = _____	2). 21 x 3 = _____	3). 42 ÷ 6 = _____	4). 9 x 8 = _____
5). 72 ÷ 8 = _____	6). 9 x 9 = _____	7). 132 ÷ 12 = _____	8). 120 x 2 = _____
9). 122 ÷ 2 = _____	10). 12 x 11 = _____	11). 96 ÷ 3 = _____	12). 4 x 300 = _____
13). 96 ÷ 12 = _____	14). 444 ÷ 4 = _____	15). 12 x 12 = _____	16). 45 ÷ 5 = _____
17). 6 x 9 = _____	18). 11 x 11 = _____	19). 36 ÷ 3 = _____	20). 8 x 7 = _____
21). 155 ÷ 5 = _____	22). 3 x 41 = _____	23). 816 ÷ 8 = _____	24). 7 x 9 = _____
25). 60 x 4 = _____	26). 84 ÷ 7 = _____	27). 484 ÷ 4 = _____	28). 49 x 2 = _____

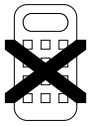


19). Start at the centre of the spiral and write the answers in words in the appropriate places.

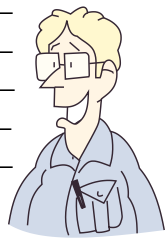
20). Hidden in the spiral are **five** mystery pop stars/groups. To find the stars read off the letters in the shaded squares starting at the centre of the spiral.



Spiralling Sums 2 (Multiplication/Division).



Work out and then write in the answers to the following calculations.



1). 48 ÷ 4 = _____ 2). 11 x 6 = _____ 3). 224 ÷ 2 = _____ 4). 21 x 4 = _____
5). 48 ÷ 6 = _____ 6). 30 x 6 = _____ 7). 120 ÷ 30 = _____ 8). 6 x 12 = _____
9). 134 ÷ 2 = _____ 10). 131 x 5 = _____ 11). 12 x 12 = _____ 12). 24 ÷ 8 = _____
13). 7 x 4 = _____ 14). 52 x 3 = _____ 15). 6 x 3 = _____ 16). 222 ÷ 2 = _____
17). 72 ÷ 6 = _____ 18). 101 x 6 = _____ 19). 38 ÷ 2 = _____ 20). 8 x 8 = _____
21). 32 x 3 = _____ 22). 9 x 5 = _____ 23). 134 x 2 = _____ 24). 25 x 5 = _____
25). 45 ÷ 3 = _____ 26). 816 ÷ 4 = _____ 27). 34 ÷ 2 = _____ 28). 840 ÷ 4 = _____

24).
19).
11).
9).
8). **5).** **6).** 15). **20).**
28). **18).**
14). **2).**
1).
7).
3).
4).
17).
10). 16). 25).
13). 12). 21).
27).
23). 22).
26).

19). Start at the centre of the spiral and write the answers in words in the appropriate places.
20). Hidden in the spiral are **five** mystery pop stars/groups. To find the stars read off the letters in the shaded squares starting at the centre of the spiral.