

Worksheets by Smile Number

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Two Loops Cards

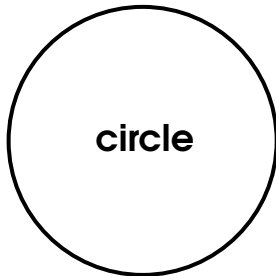
Cut out these 12 cards



RED

BLUE

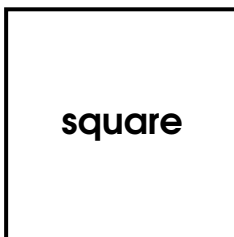
YELLOW



circle

LARGE

SMALL



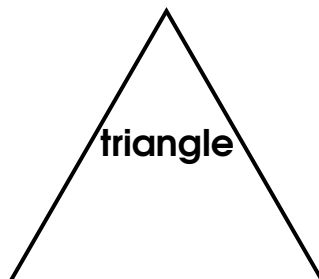
square

THICK

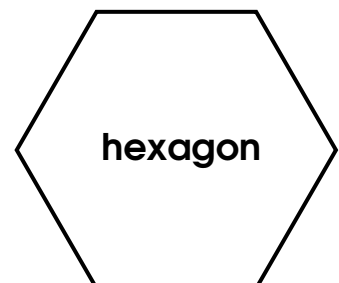
THIN



rectangle



triangle



hexagon

Powers of two

[illegible]

$128 = 2^7$ 7 is called the 'power' or 'index'

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Powers of three

[illegible]

Powers of two

[illegible]

$128 = 2^7$ 7 is called the 'power' or 'index'

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Powers of three

[illegible]

Powers of Ten

10^6	1 000 000	$10 \times 10 \times 10 \times 10 \times 10 \times 10$	
10^5			
10^4			
10^3		$10 \times 10 \times 10$	
10^2			
10^1	10		
10^{-1}			
		$\frac{1}{10} \times \frac{1}{10}$	
	$\frac{1}{1000}$		
10^{-4}			

Complete this part first.

Look for patterns in the columns to complete the table.

Powers of Ten

10^6	1 000 000	$10 \times 10 \times 10 \times 10 \times 10 \times 10$	
10^5			
10^4			
10^3		$10 \times 10 \times 10$	
10^2			
10^1	10		
10^{-1}			
		$\frac{1}{10} \times \frac{1}{10}$	
	$\frac{1}{1000}$		
10^{-4}			

Complete this part first.

Look for patterns in the columns to complete the table.

Looking Around

Everything has shape and there is a word to describe each shape.

Look around to find examples of these shapes.

Look in the classroom.

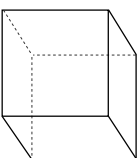
Look outside.

Look at home.

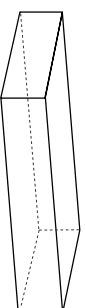
List as many as you can.

Which solid has most examples? Why?

Cube



Cuboid



cupboard

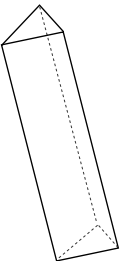
Cylinder



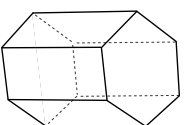
Cone



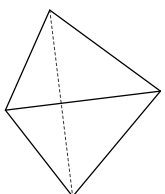
Triangular Prism



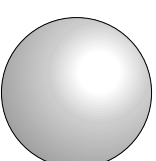
Hexagonal Prism



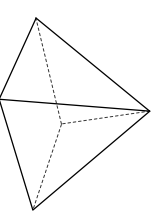
Tetrahedron
(Triangular based pyramid)



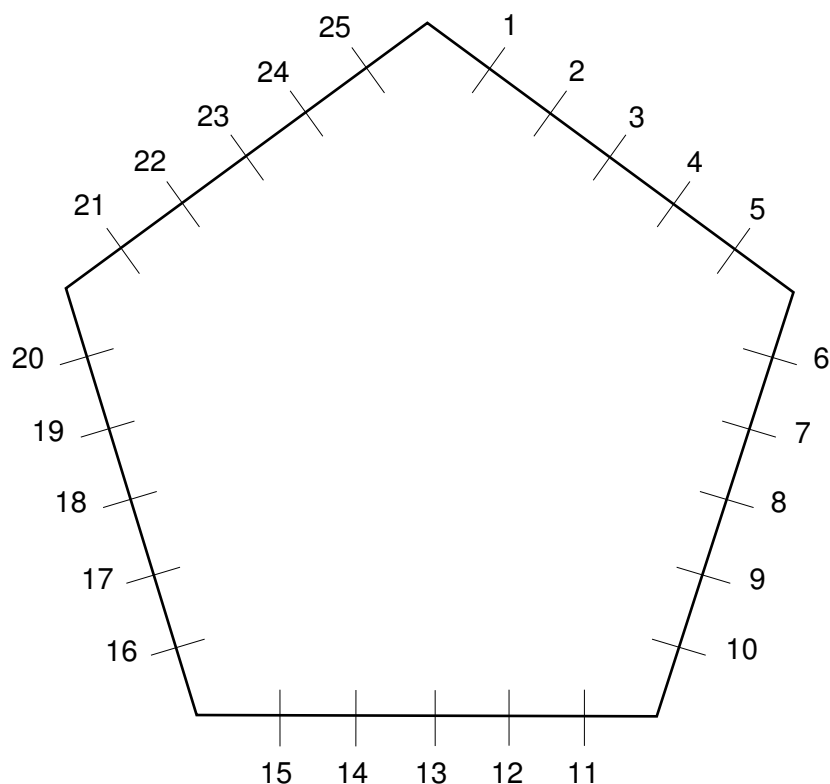
Sphere



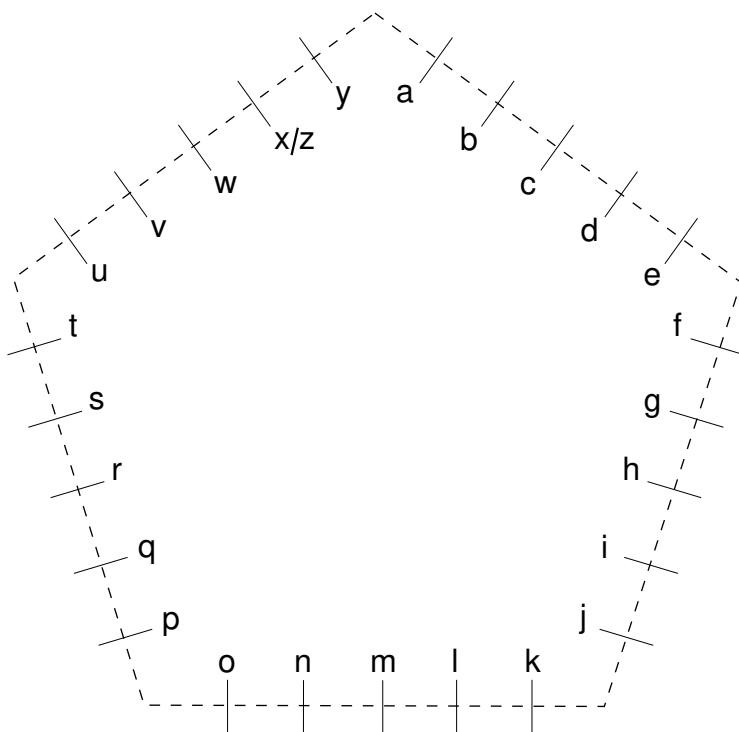
Square Based Pyramid



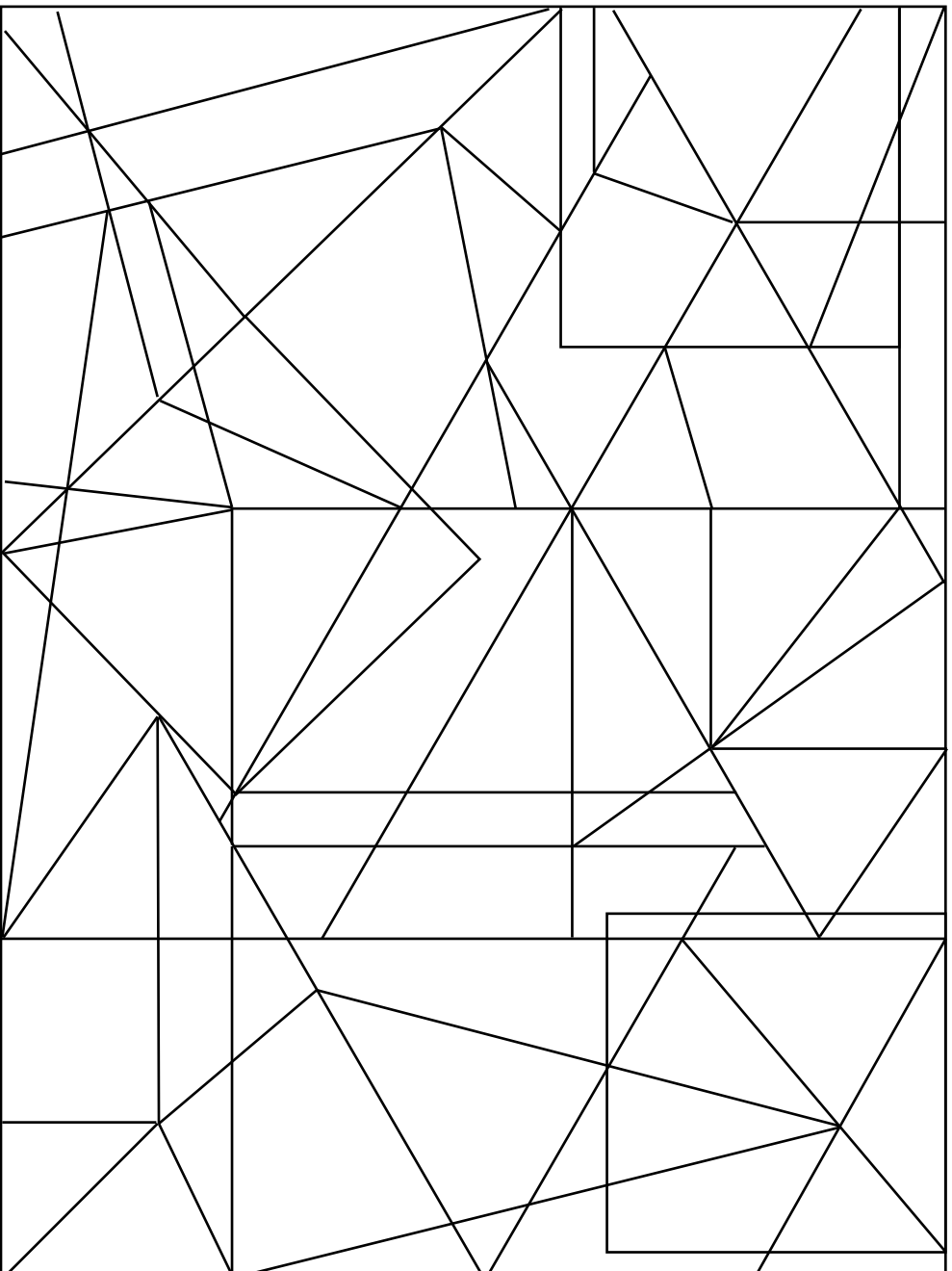
Number Codex



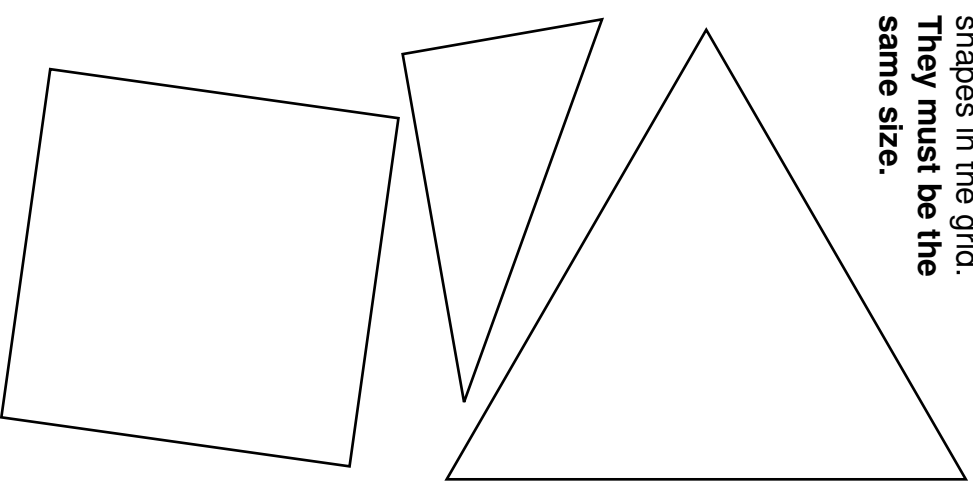
Cut out this Rotatable Pentagon carefully so that it will fit on the frame above.



Hidden Shapes



Find 4 of each of these shapes in the grid. **They must be the same size.**



Clues across

- 1. $20 - 3$
- 2. $1 + 3 + 5 + 7 + 9$
- 5. Two hundred and sixty-four
- 8. One less than 70
- 9. $10 \times 10 - 1$

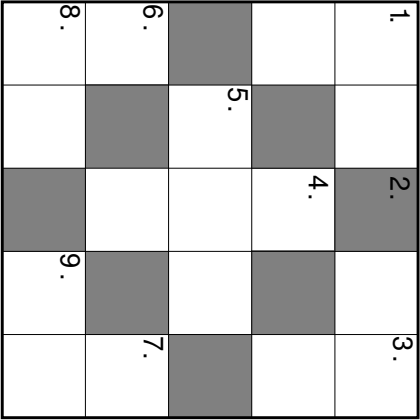


Cross Puzzles

Use the clues to solve these two cross puzzles.

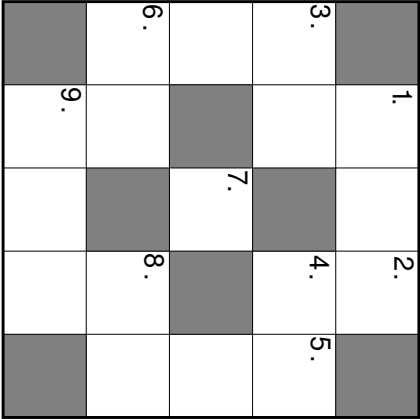
Clues down

- 1. Number of hours from midnight to noon.
- 3. Half of a hundred.
- 4. $188 + 100 + 78$
- 6. $2 \times 2 \times 2 \times 2$
- 7. 7×7



Clues across

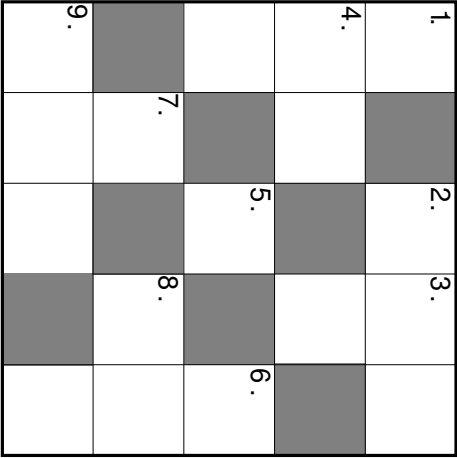
- 1. $100 + 10 + 1$
- 3. Number of hours in one day.
- 4. $2 \times 2 \times 2 \times 2 \times 2$
- 6. Half of 10
- 7. 6×10
- 8. $3 \times 3 \times 3$
- 9. $110 - 5$



Clues down

- 1. $8 + 6$
- 2. $6\frac{1}{2} \times 2$
- 3. $6 \times 6 \times 6$
- 5. 3 less than 300
- 8. $9 + 7 + 5 + 3 + 1$

Use the grid below to invent a cross puzzle of your own.



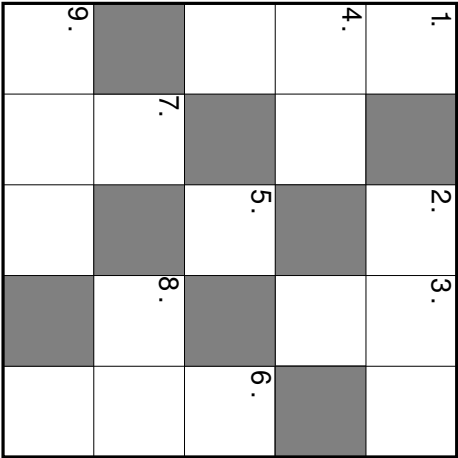
Write the clues and give it to someone else to solve.

Clues across

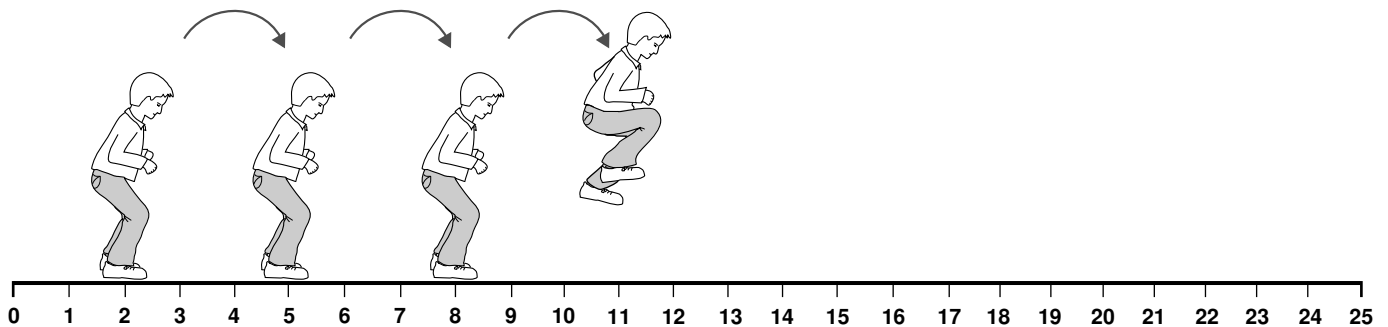
- 1. _____
- 2. _____
- 4. _____
- 8. _____
- 9. _____

Clues down

- 1. _____
- 3. _____
- 5. _____
- 6. _____
- 7. _____



Jumping Jack



Jack jumped from 2 to 5 and then to 8.

How many spaces did he clear at each jump?

Where will he land if he makes another similar jump?

Where will yet another jump take him?

These jumps form a sequence 2, 5, 8, _____, _____,

Fill in the next two missing numbers in the sequence.

Give the next two numbers in each of the following sequences.
The number line at the top may help you.

- 1) 1, 6, 11, _____, _____,
- 2) 12, 15, 18, _____, _____,
- 3) 2, 6, 10, _____, _____,
- 4) 7, 11, 15, _____, _____,
- 5) 9, 13, 17, _____, _____,
- 6) 1, 7, 13, _____, _____,
- 7) 3, 8, 13, _____, _____,
- 8) 4, 7, 10, _____, _____,
- 9) 5, 8, 11, _____, _____,
- 10) 6, 9, 12, _____, _____,

Race Track

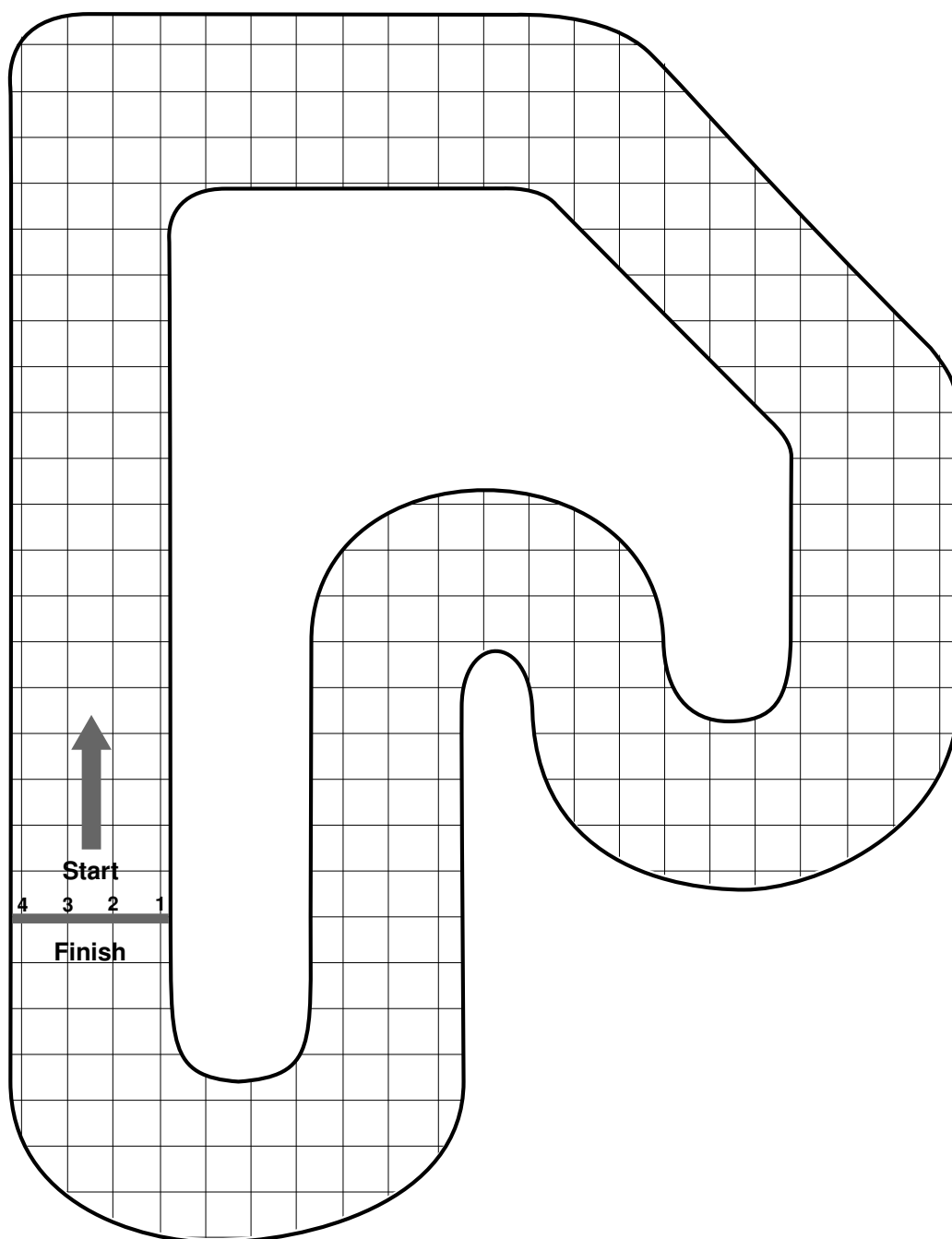
This is a game for 2 to 4 players that simulates cars racing around a track. Each player moves in turn and the moves must be written as vectors.

Rules

- Each player starts off from rest, i.e. with the vector $\begin{pmatrix} 0 \\ 0 \end{pmatrix}$.
- To move, each component of the previous move may be changed by 1 or left alone.

For example after a move of $\begin{pmatrix} -1 \\ 3 \end{pmatrix}$ any of the following moves are possible:

$$\begin{pmatrix} -1 \\ 3 \end{pmatrix} \quad \begin{pmatrix} 0 \\ 3 \end{pmatrix} \quad \begin{pmatrix} -2 \\ 3 \end{pmatrix} \quad \begin{pmatrix} -1 \\ 2 \end{pmatrix} \quad \begin{pmatrix} 0 \\ 2 \end{pmatrix} \quad \begin{pmatrix} -2 \\ 2 \end{pmatrix} \quad \begin{pmatrix} -1 \\ 4 \end{pmatrix} \quad \begin{pmatrix} 0 \\ 4 \end{pmatrix} \quad \begin{pmatrix} -2 \\ 4 \end{pmatrix}$$



Rotations

Rotate the shapes as instructed below.
Tracing paper might help.
Shape **A** has been done for you.

Shape	Centre of Rotation	Turn	Direction
A	(-5, 3)	$\frac{1}{4}$	clockwise
B	(-7, 7)	$\frac{1}{4}$	clockwise
C	(3, 9)	$\frac{1}{4}$	anti-clockwise
D	(1, 1)	$\frac{1}{2}$	anti-clockwise
E	(-12, 3)	$\frac{1}{4}$	anti-clockwise
F	(5, 4)	$\frac{1}{2}$	clockwise
G	(-7, -2)	$\frac{1}{4}$	anti-clockwise
H	(-3, -4)	$\frac{3}{4}$	anti-clockwise
I	(2, -3)	$\frac{1}{4}$	clockwise
J	(11, 6)	$\frac{1}{2}$	
K	(7, -4)	$\frac{1}{4}$	anti-clockwise
L	(11, 1)	$\frac{1}{2}$	
M	(10, -7)	$\frac{1}{2}$	

