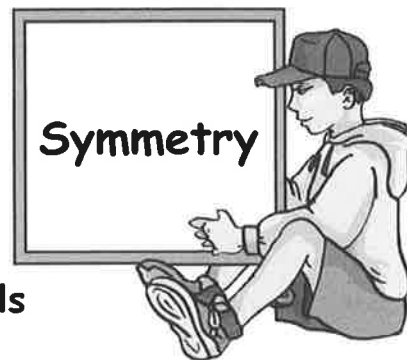


CHAPTER 11



Review 10

Percentages, Fractions & Decimals

1. Change each of the following into decimals and fractions in their **simplest form** :-
a 75% b 60% c 15% d 12.5%.

2. Change each fraction into a decimal (to two decimal places) then to a percentage :-
a $\frac{1}{6}$ b $\frac{7}{9}$ c $\frac{21}{34}$ d $\frac{123}{432}$.

3. Write the following list in order, **smallest** first :-
33%, 0.34, $\frac{1}{3}$, $\frac{74}{150}$, 0.4.

4. Eric scored the following in 3 tests :-
R.E. $\frac{37}{55}$ Science $\frac{42}{60}$ French $\frac{6}{10}$.

Which was his best score? *Explain.*



5. Calculate :-

- a 34% of 140 kg b 15% of 78 m c 17.5% of £4 d 3% of £124
e 2.6% of £10 f 9% of 1 m g 48% of 24 h 2% of £62.

6. At a school assembly, 34% of the 400 pupils were girls.

- a What was the percentage of boys?
b How many boys were at the assembly?



7. a There is a 23% **discount** on a suit costing £112.
How much does the suit cost in the sale?
b A £30 pair of shoes has its price **increased** by 15%.
The price of the shoes **decreases** later by 15%.
How much do the shoes cost then? (*Careful*)

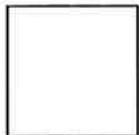


Exercise 1

Line Symmetry

1. Make a neat tracing of each of the following shapes.

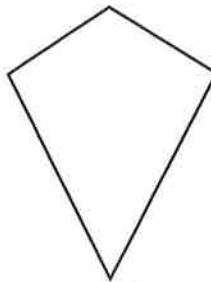
a



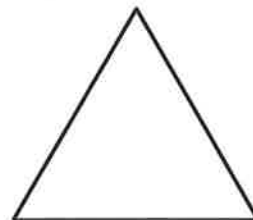
b



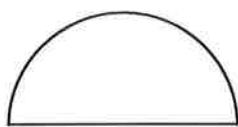
c



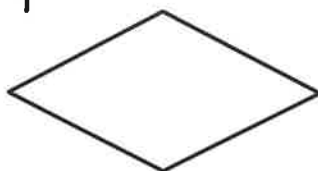
d



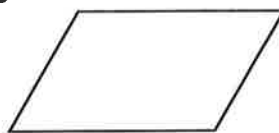
e



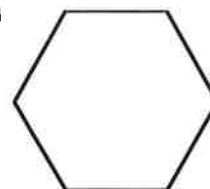
f



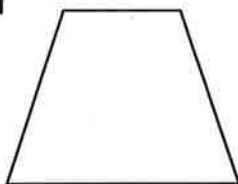
g



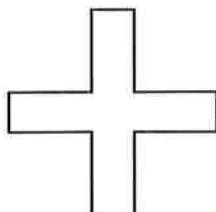
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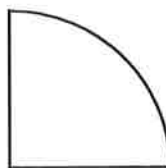
i



j



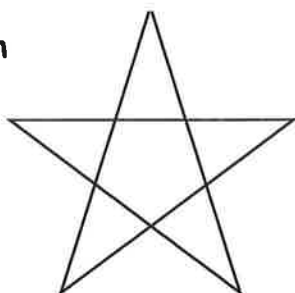
k



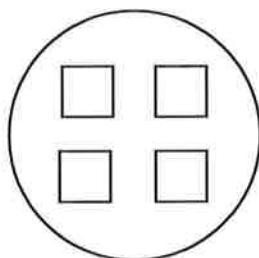
l



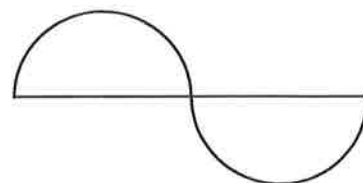
m



n



o

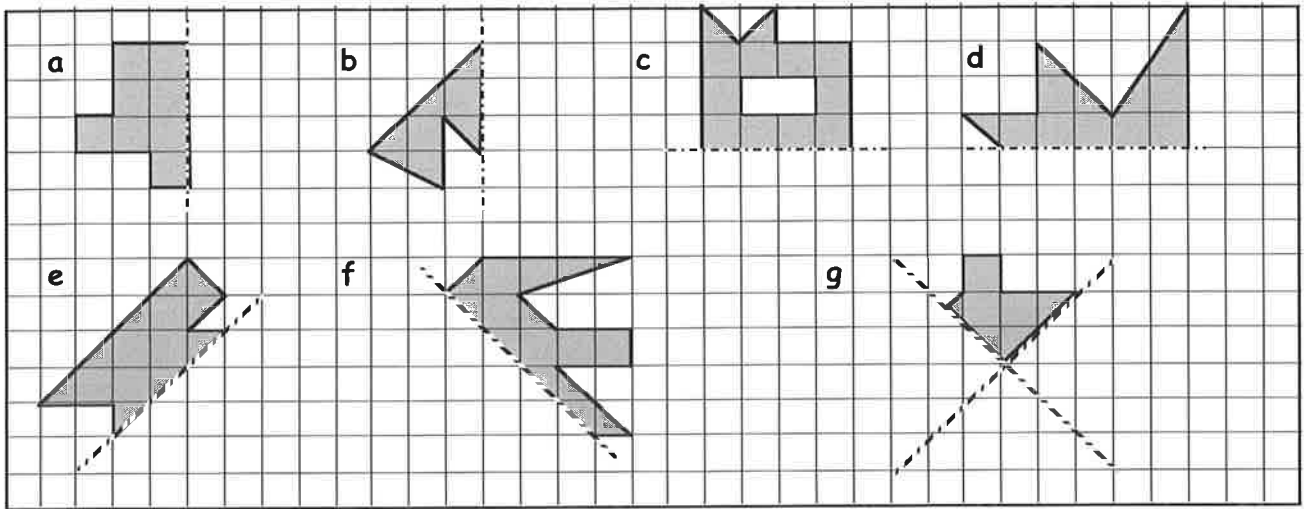


2. a For each shape you have traced (or copied) show all lines of symmetry.
b Write down next to each shape how many lines of symmetry it has.

3. Make a list of those capital letters of the alphabet that have lines of symmetry.

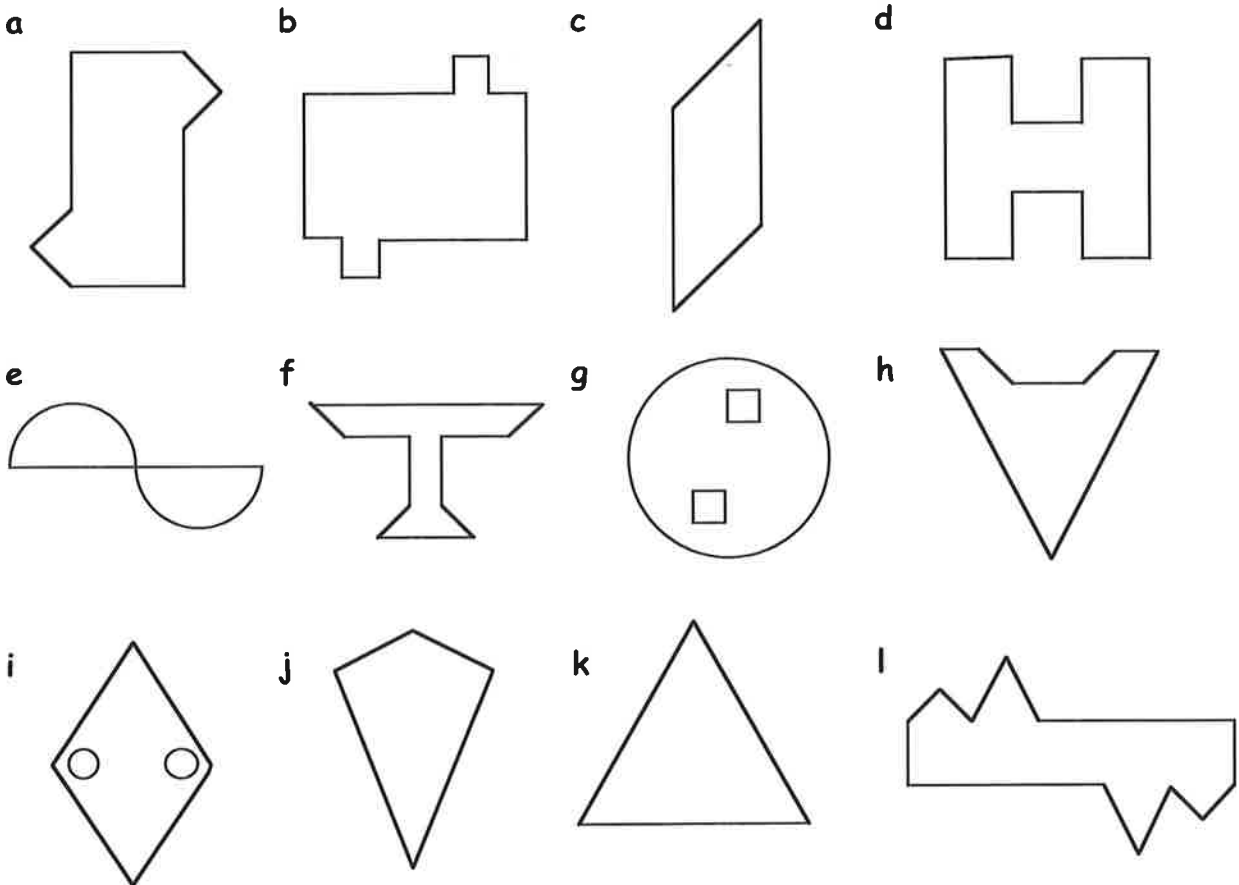
A B C

4. Copy each of the following shapes neatly and complete each one such that the dotted line is a line of symmetry each time.

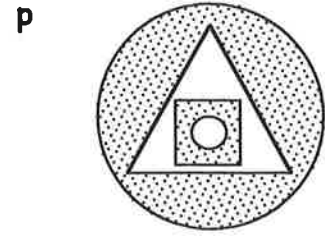
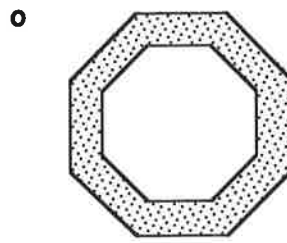
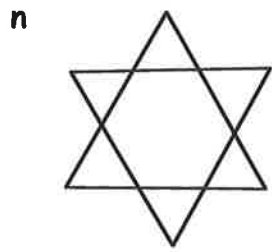
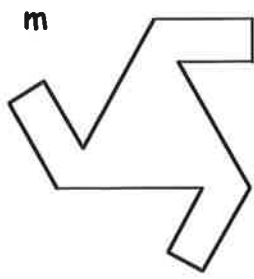


Exercise 2 Rotational Symmetry

1. Which of the following shapes have half-turn symmetry? (Answer **yes** or **no**).



continues over the page ...



2. For each shape in Question 1, state the **order** of symmetry.

3. a Which seven capital letters of the alphabet have $\frac{1}{2}$ -turn symmetry?

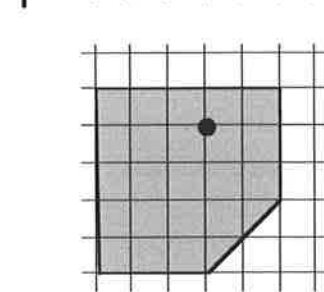
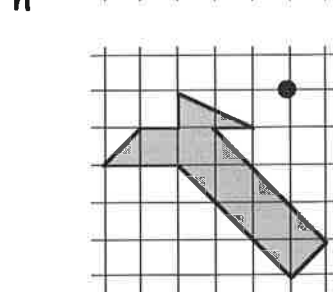
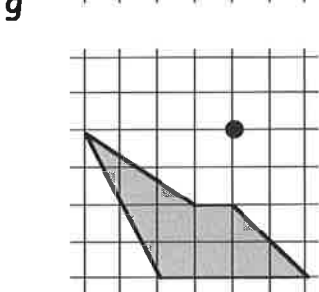
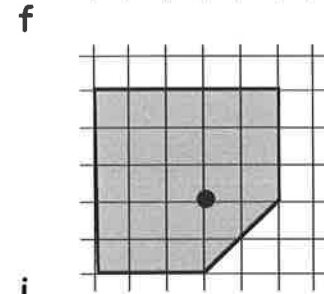
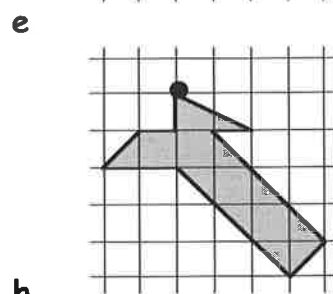
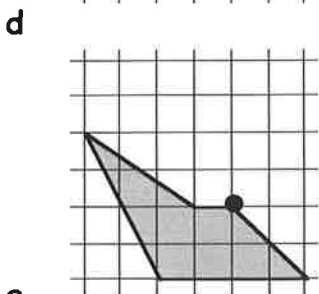
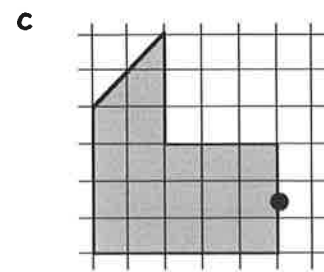
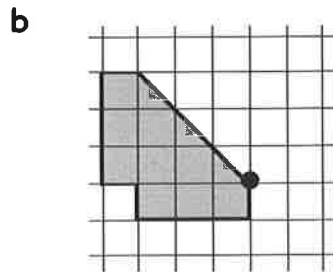
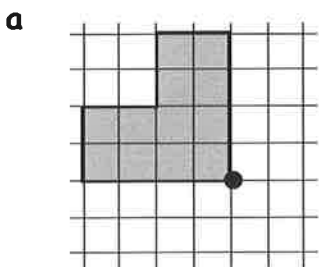
A B C

b Of these seven letters, only three do **not** have a line of symmetry.
Which three?

Exercise 3 Creating a Shape with Half-turn Symmetry

1. Make a copy of each of the following shapes.

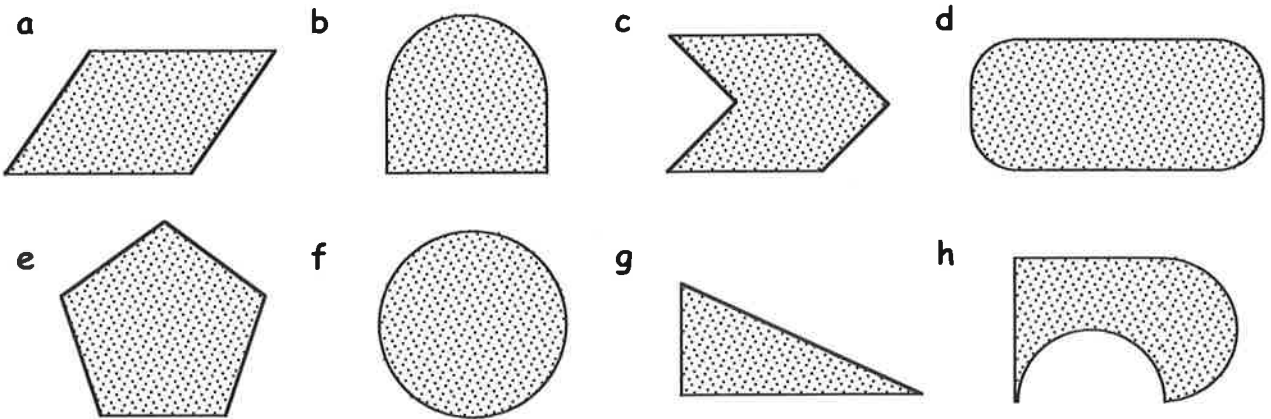
Create a shape which has half turn symmetry by rotating each shape by 180° about the dot.



Exercise 4

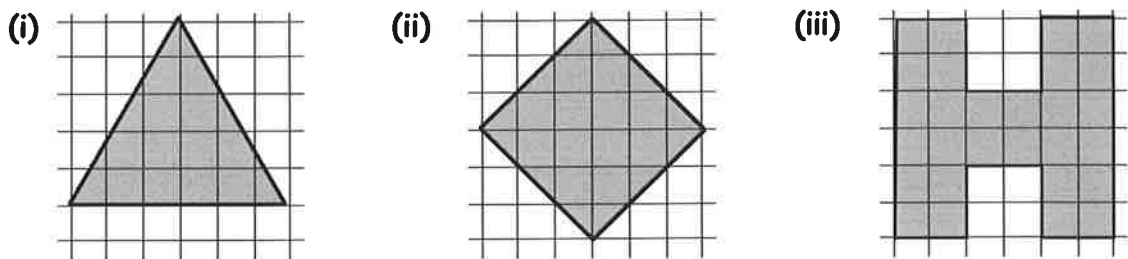
Translation (Slide) Symmetry

1. Which of the following shapes would not "tile the plane".



2. a Draw each shape shown below and shade it in.

b Tile the plane using 6-8 congruent tiles



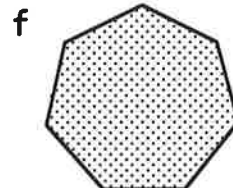
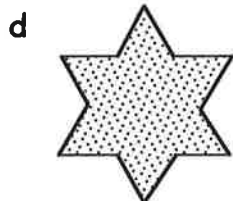
Revisit – Review – Revise 11

1. Write down how many lines of symmetry are in each of these shapes :-

a square

b rectangle

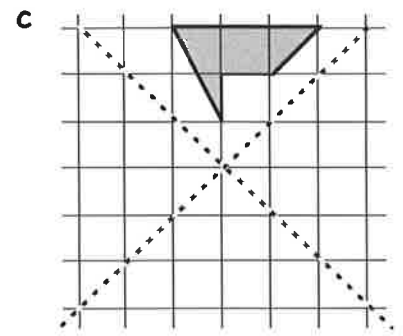
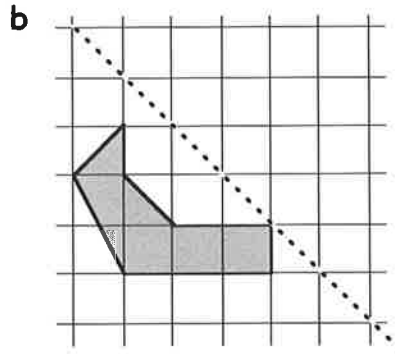
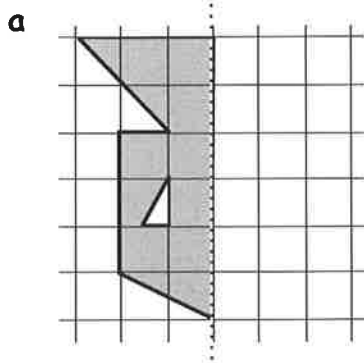
c parallelogram



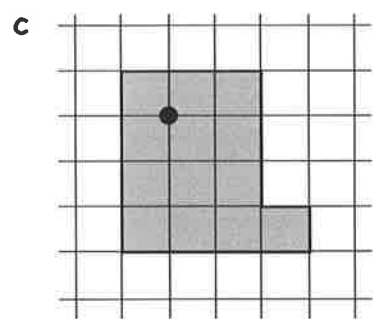
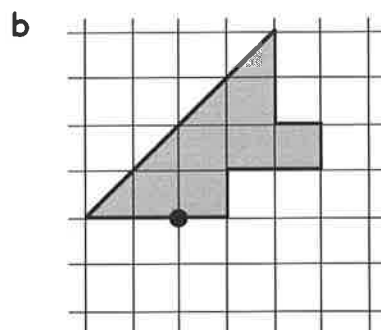
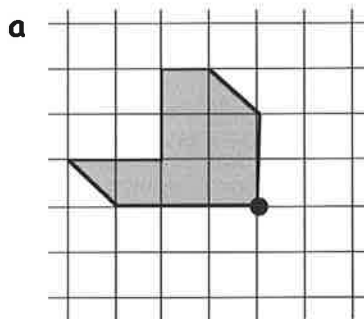
2. Which, if any, of the shapes in question 1 have half turn symmetry ?

3. State, for each shape in question 1 the order of rotational symmetry.

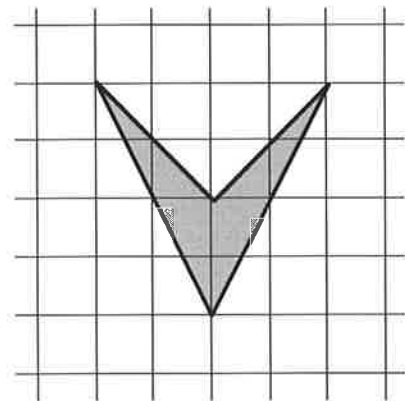
4. Copy these shapes neatly on to squared paper and complete the diagrams so that the **dotted** lines are lines of symmetry :-



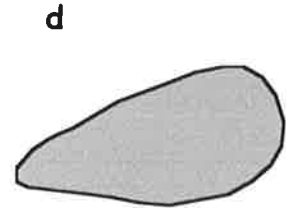
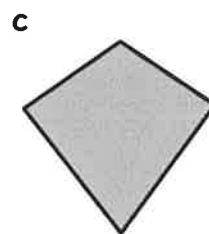
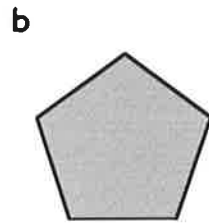
5. Copy these shapes and give each of them a half turn around the dot.



6. a Make a copy of this kite-shaped tile in the **centre of a page in your jotter** and shade it.
 b Show how to completely surround it with congruent tiles.



7. Which of the following shapes will **not** tile the plane ?



8. Design some of your own shapes that will tile the plane.