

SCORE
A

Geometry

With Classified
answer book

8

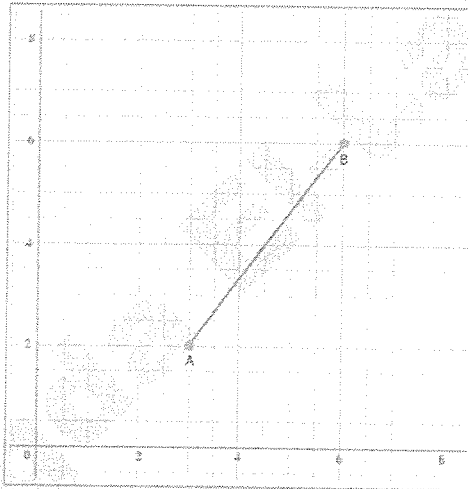
Eng. Magda El-Labban

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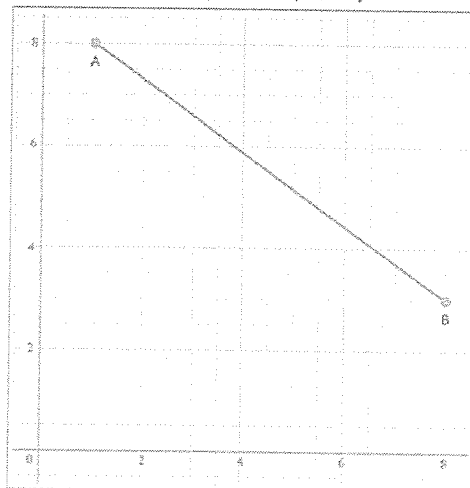
23- Pythagoras therom

1. (a) A triangle has sides 12cm, 16cm and 20cm. Is the triangle a right-angled triangle? Give your reason.
- (b) A triangle has sides 2.8cm, 4.5cm and 5.3cm. Is the triangle a right-angled triangle? Give your reason.

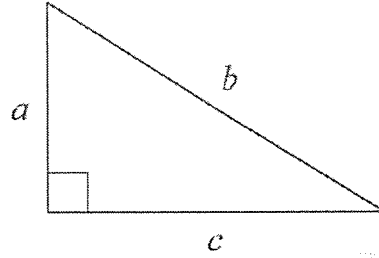
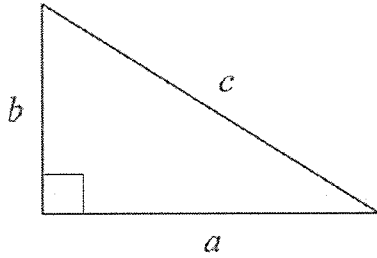
2. (a) A is the point (3, 2) and B is the point (6, 6). Find the length AB.



- (b) A is the point (1, 8) and B is the point (8, 3). Find the length AB.

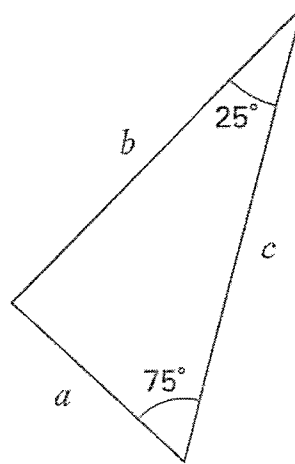
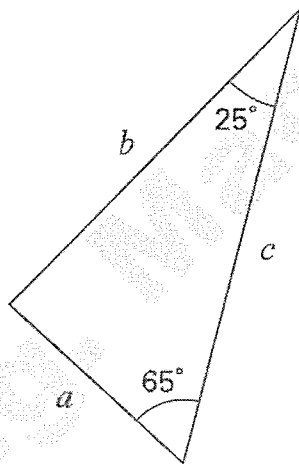


3. In which triangle below does $a^2 + b^2 = c^2$?
 (a) Tick (✓) the correct triangle.



- (b) For the other triangle, write an equation linking a , b and c

- (c) In which triangle below does $a^2 + b^2 = c^2$?
 Tick (✓) the correct triangle.

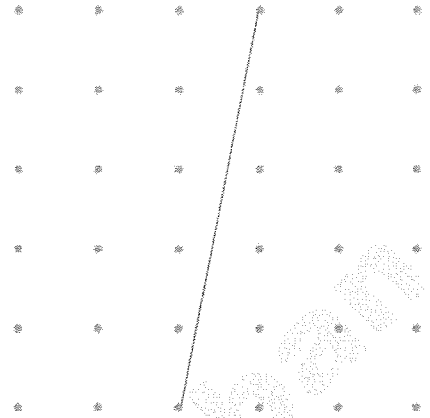


For the other triangle, explain why $a^2 + b^2$ does not equal c^2

4. The line shown is the hypotenuse of a right-angled triangle.

Complete the triangle.

How many possibilities can you find?

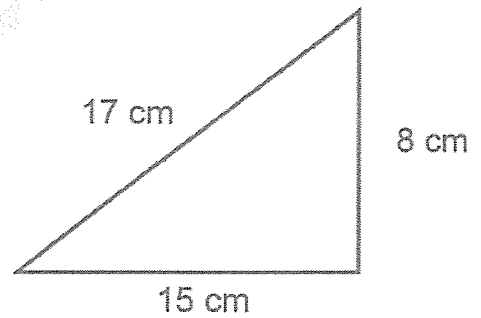


5. Show that this triangle contains a right angle.

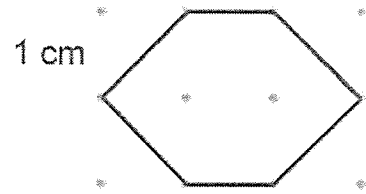
If you increase the height of the triangle by 1 cm then it remains right-angled

Ron

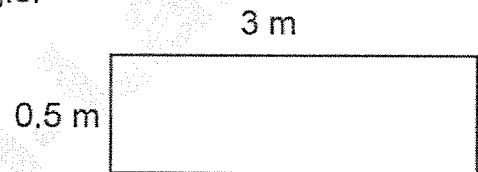
Do you agree with Ron?



6. A hexagon is drawn on a centimetre square grid. Annie says that the perimeter of the hexagon is 6 cm. Explain why Annie is wrong.



7. Find the length of the diagonal of the rectangle. Give your answer to two decimal places.



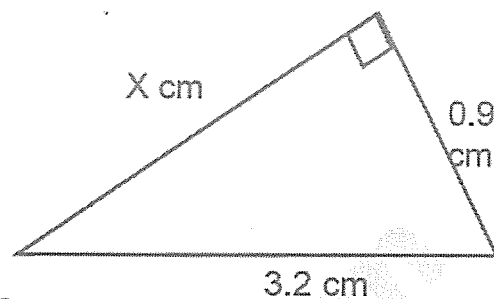
8. A football pitch has a length of 100 m and a width of 70 m.

The diagonal length is 125 m.

Justify whether the pitch is rectangular or not.

9. Alen is calculating the missing length of the right-angled triangle

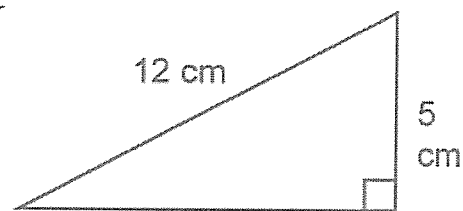
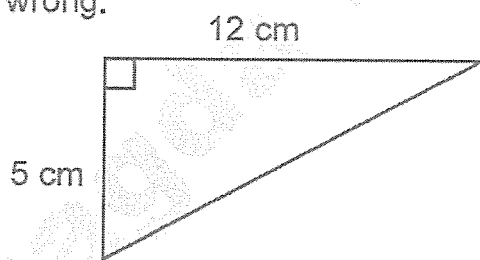
$$a^2 + b^2 = \text{hyp}^2$$
$$x^2 + 0.9^2 = 3.2^2$$
$$x^2 = 3.2^2 - 0.9^2$$



Complete Alen's working to find the missing side.

10. Anna says that the two triangles have the same perimeter.

Show that Anna is wrong.



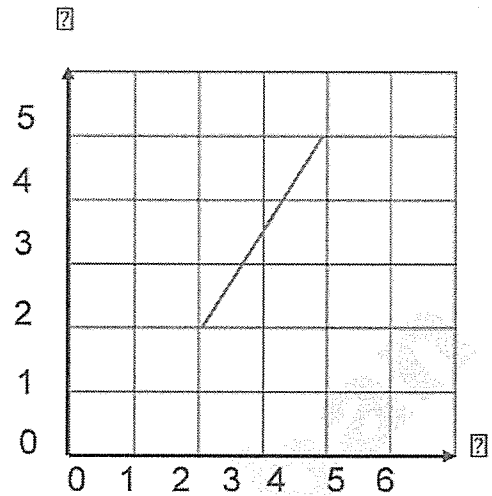
11. Who do you agree with? Why?

Rosie

I can use Pythagoras' theorem to find the length of the line segment.

You can't use Pythagoras' theorem as there is no right-angled triangle.

Jack



12. Angle $MLN = 90^\circ$.
 $LM = 3.7$ m. $MN = 6.3$ m.

Work out the length of LN . Give your answer correct to 3 significant figures.

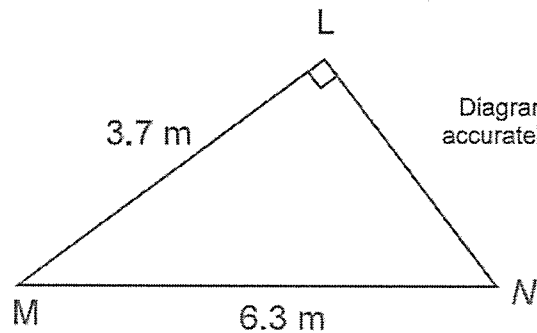


Diagram NOT accurately drawn

13.

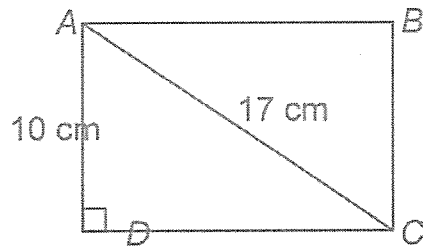


Diagram NOT accurately drawn

Calculate the length of the side CD .
Give your answer correct to one decimal place.

..... cm

14. A ladder is 6 m long.
The ladder is placed on horizontal ground, resting against a vertical wall.
The instructions for using the ladder say that the bottom of the ladder must not be closer than 1.5 m from the bottom of the wall.

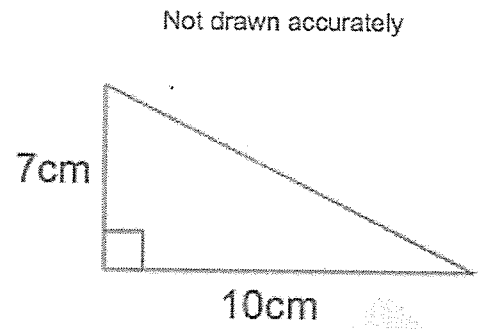
How far up the wall can the ladder reach?
Give your answer correct to 1 decimal place.

..... m

..... km

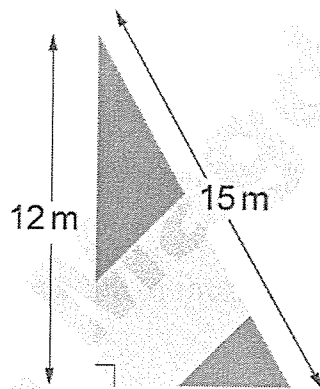
15. Shown is a right-angled triangle.

Work out the perimeter of the triangle



..... cm

16. Here is a boat's sail in the shape of a right angled triangle.

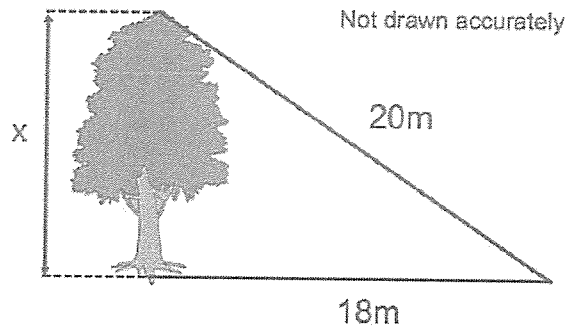


NOT TO
SCALE

Work out the total distance around the outside of the sail.

.....cm.....m.[2]

17.

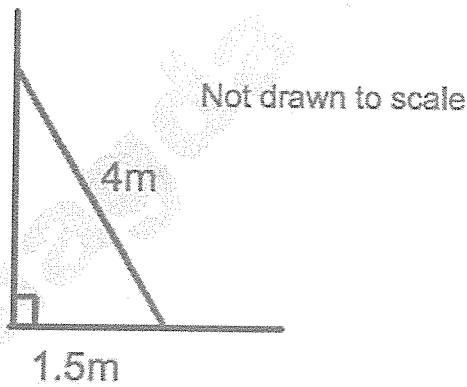


The distance from a point on the ground to the base of a tree is 18 metres. The distance from a point on the ground to the top of a tree is 20 metres.

Calculate the height of the tree.
Give the answer correct to 1 decimal place.

..... m

18.

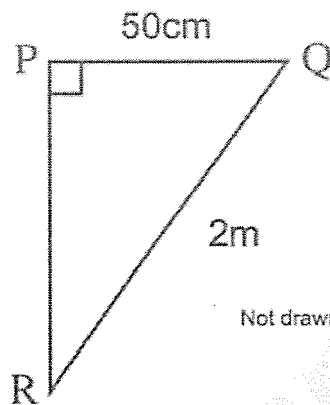


A 4 metre ladder is placed against a vertical wall.
The base of the ladder is 1.5 metres from the base of the wall.

Work out how far the ladder reaches up the wall.

19. PQR is a right-angled triangle.

PQ is 50cm
QR is 2m



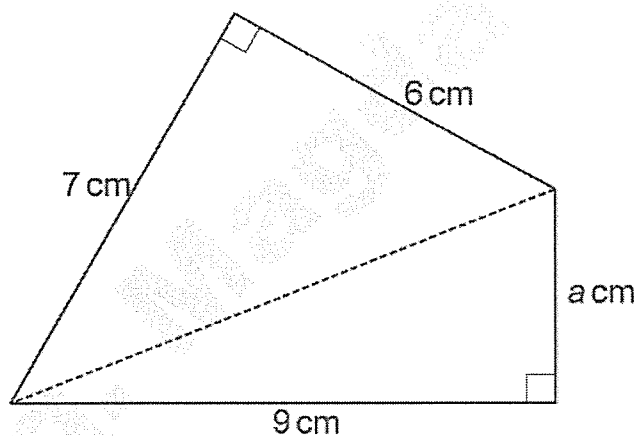
Not drawn accurately

Calculate the length of PR.

Give your answer in metres, correct to 1 decimal place.

..... m

20. The diagram shows a quadrilateral containing two right angles.



NOT TO SCALE

Calculate the value of a.

a =

21. Triangle ABC has a perimeter 17cm.

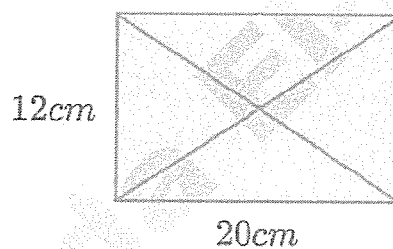
$$AB = 4\text{cm} \quad BC = 6\text{cm}$$

By calculation, deduce whether triangle ABC is a right-angled triangle.

22. A frame is made from wire.

The frame is in the shape of a rectangle 12 cm by 20 cm.

The diagonal of the rectangle is also made from wire.

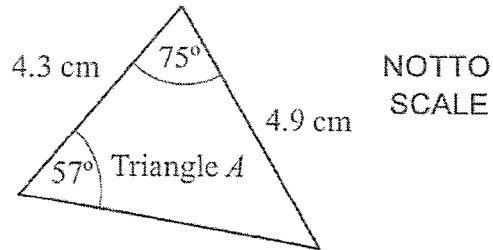


Calculate the total length of wire needed to make the frame and the diagonals.

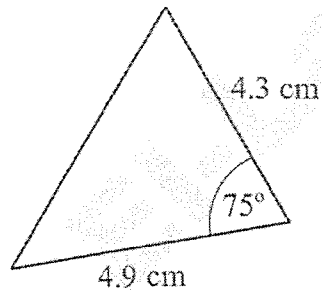
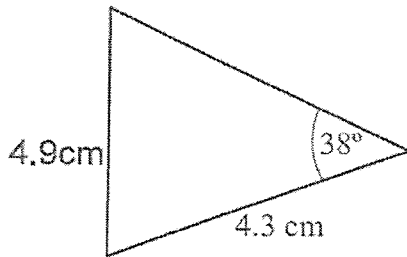
Give your answer correct to 1 decimal place.

24- Congruency

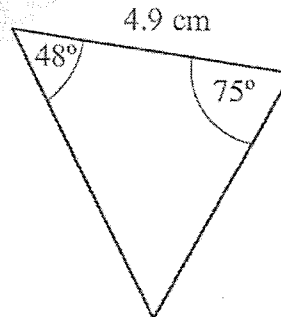
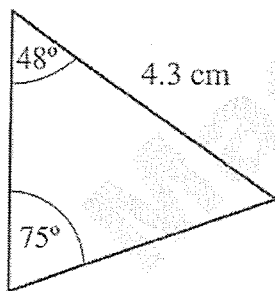
1 . Triangle A is shown in the diagram.

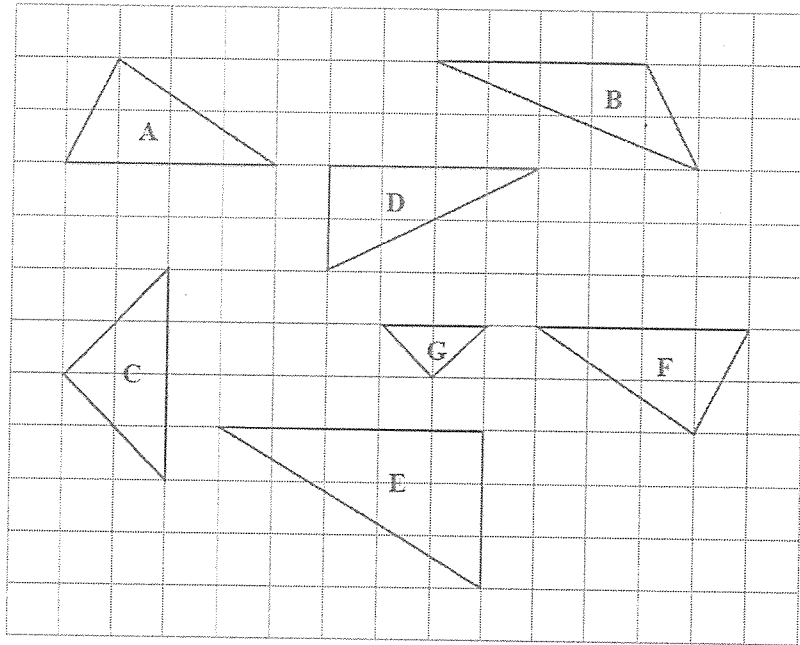


Draw a ring around the triangles below that are congruent to Triangle A.



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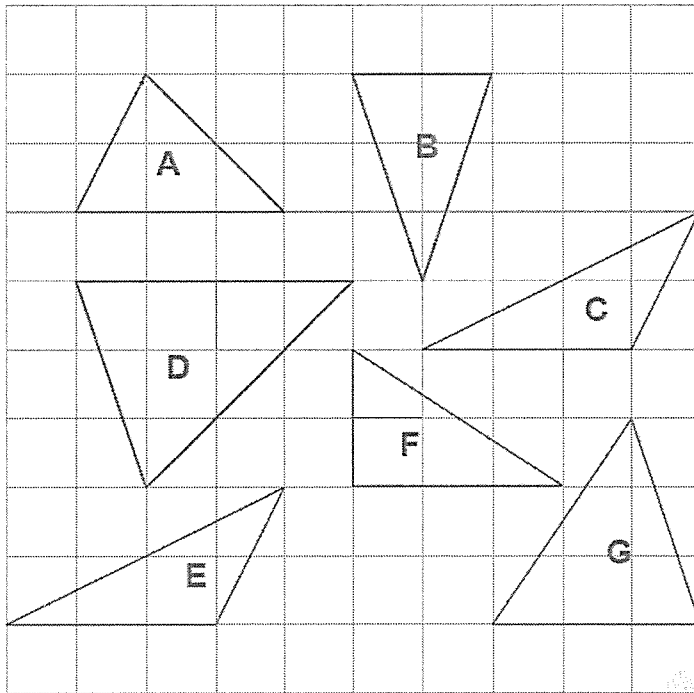
(a) Write down the letter of an isosceles triangle.

(b) Write down the letters of **two** triangles which are congruent.
 and

Triangle **C** is an enlargement of triangle **G**.

(c) Write down the scale factor of this enlargement.

3. Here are some triangles.



- (a) Write down the letter of the triangle that is
- (i) right-angled,
 - (ii) isosceles.

Two of the triangles are congruent.

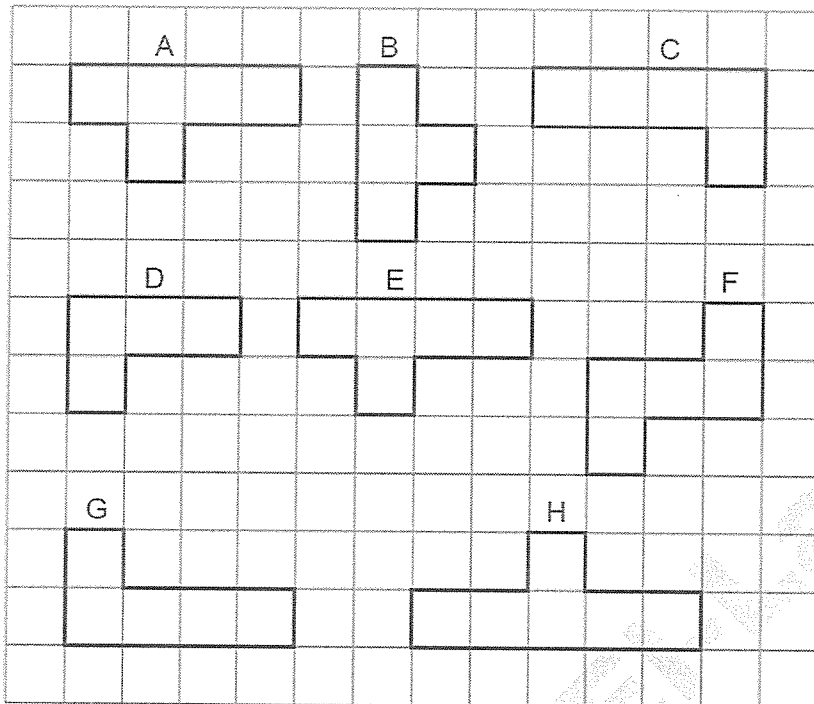
- (b) Write down the letters of these two triangles.
 and

4. Which shape is congruent to shape X?



.....

5. Here are 8 shapes.

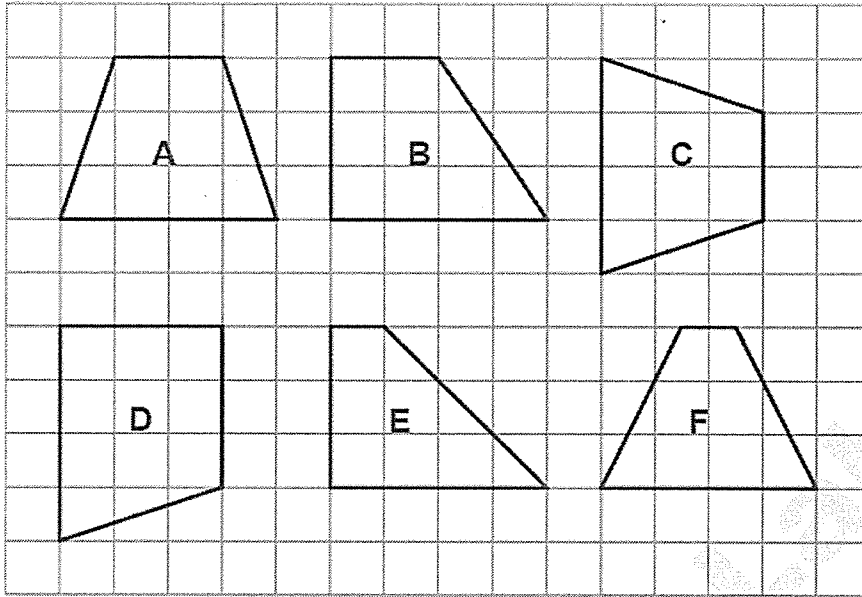


(a) Write down the letters of two **different** pairs of congruent shapes.

..... and

..... and

6. Here are 6 shapes drawn on a grid.

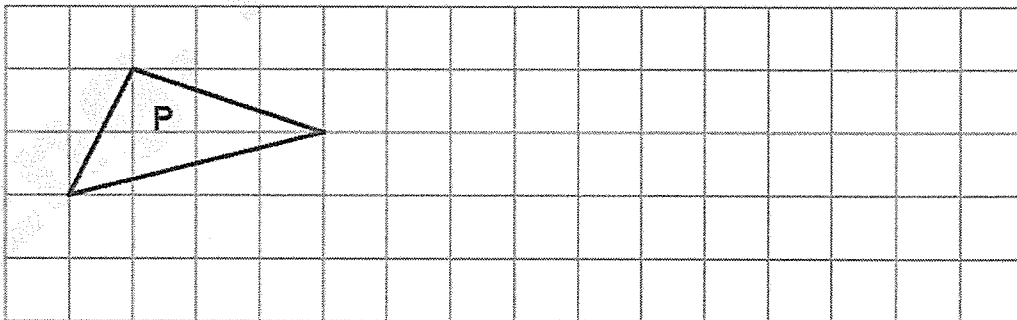


Two of these shapes are congruent.

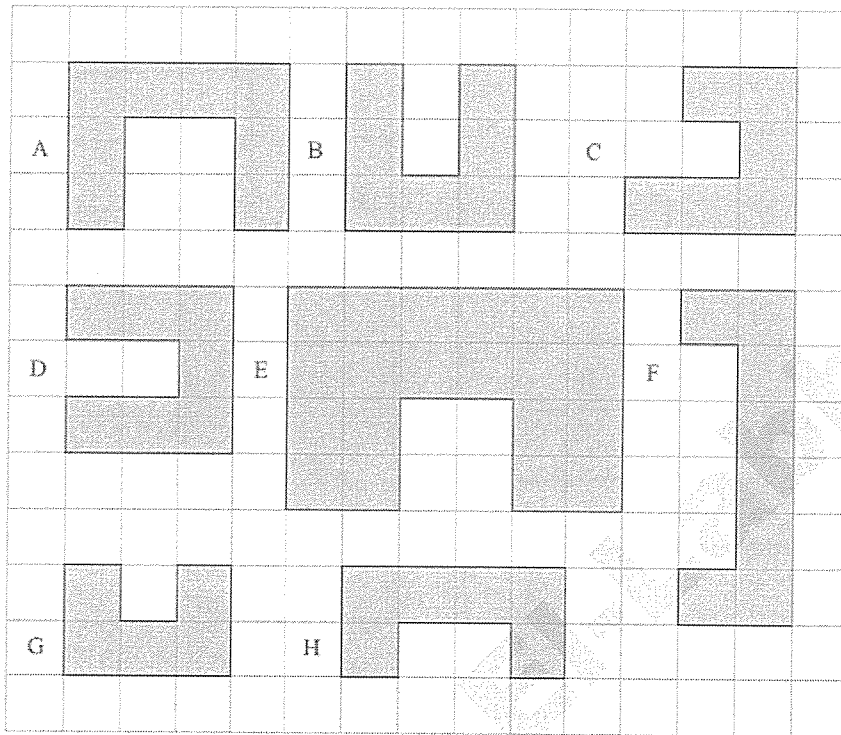
(a) Write down the letters of these two shapes.

..... and

(b) On the grid below, draw a shape that is congruent to shape **P**.



7. These shapes have been drawn on a grid of centimetre squares.



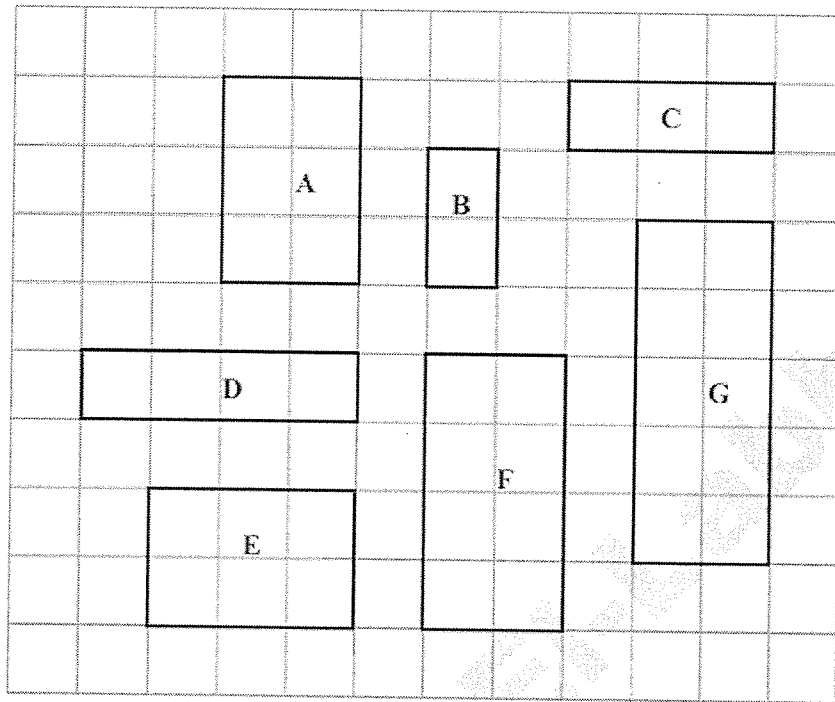
(a) (i) Write down the letters of a pair of shapes that are congruent.

..... and

(b) Find the perimeter of shape D.

..... cm

8. Here are some rectangles on a grid of centimetre squares.



(a) Find the area of rectangle **G**.

.....cm²

(b) Find the perimeter of rectangle **B**.

.....cm

Two of the rectangles are congruent.

(c) Write down the letters of these two rectangles.

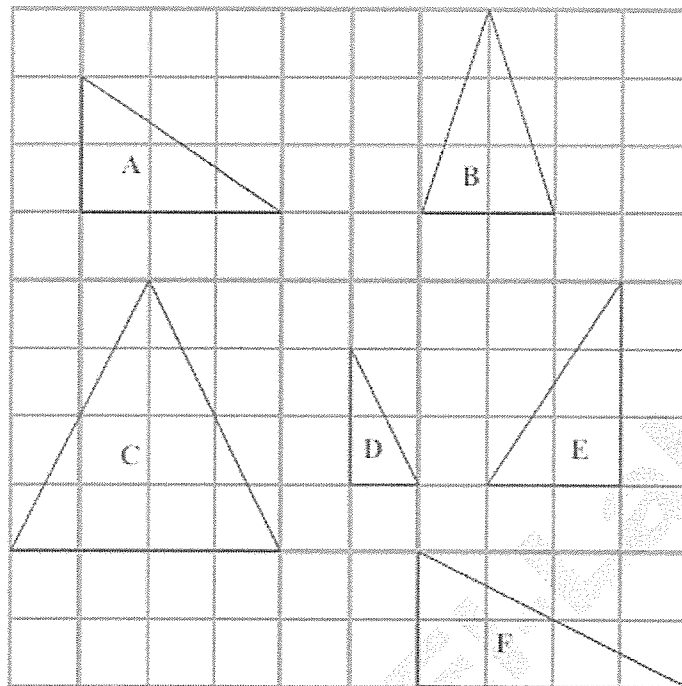
..... and

Rectangle **F** is an enlargement of rectangle **B**.

(d) Write down the scale factor of the enlargement.

.....

9. Here are some triangles drawn on a square grid.



Two of the triangles are congruent.

(a) Write down the letters of these two triangles.

..... and

One of the triangles is an enlargement of another of the triangles.

(b) Write down the letters of these two triangles.

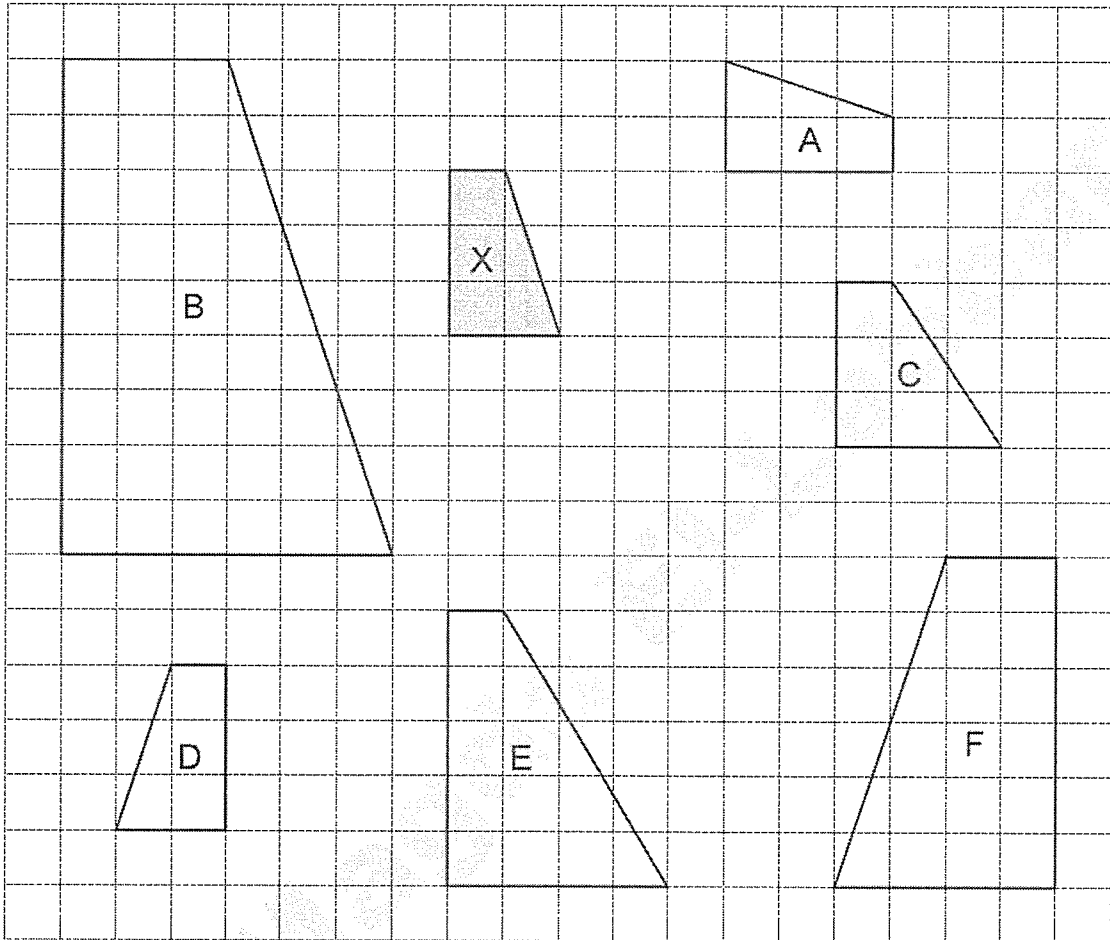
..... and

Two of the triangles each have one line of symmetry.

(c) Write down the letters of these two triangles.

..... and

10 . Here are some shapes on a grid.

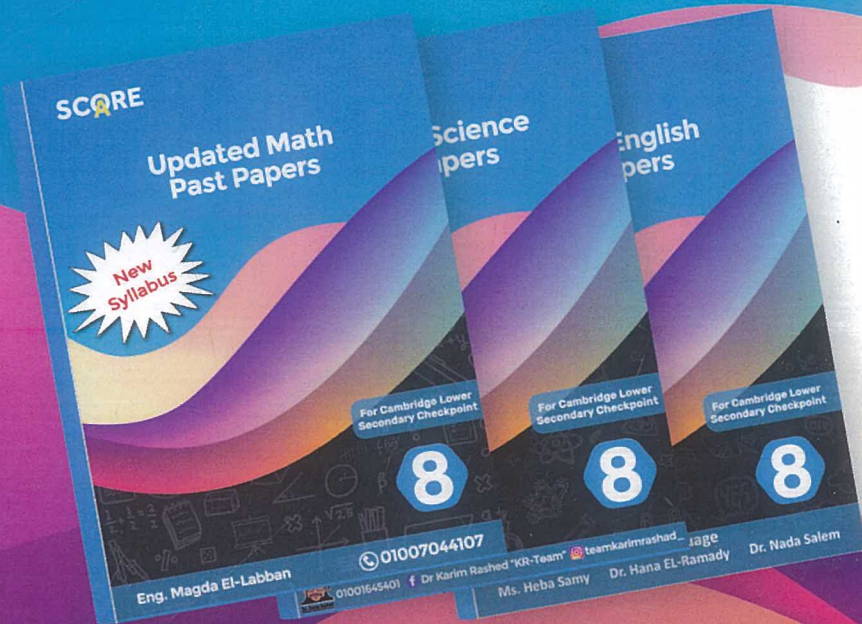


Write the letter A to F for each of the shapes in the correct part of the Carroll diagram.
Shape A has been done for you.

	Congruent to shape X	Not congruent to shape X
Similar to shape X	A	
Not similar to shape X		

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