

Name: \_\_\_\_\_

# GCSE (1 – 9)

## Similar Shapes

### Instructions

- Use **black** ink or ball-point pen.
- Answer all Questions.
- Answer the Questions in the spaces provided  
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

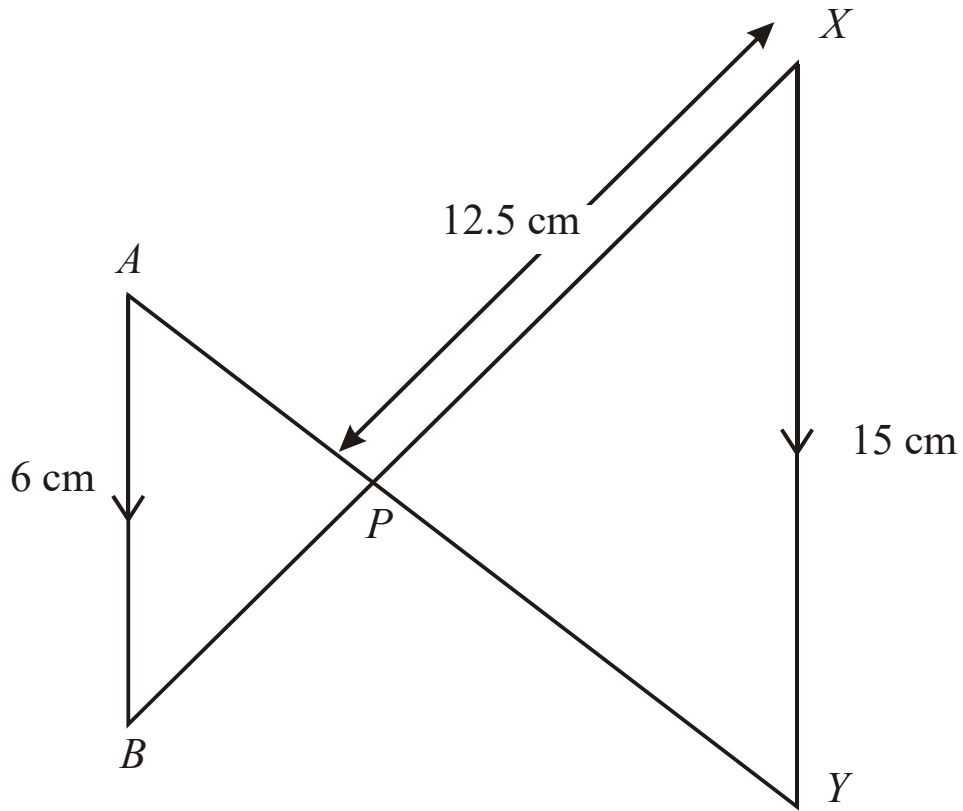
### Information

- The marks for each Question are shown in brackets  
– *use this as a guide as to how much time to spend on each Question.*

### Advice

- Read each Question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every Question.
- Check your answers if you have time at the end

1



$AB$  is parallel to  $XY$ .

The lines  $AY$  and  $BX$  intersect at  $P$ .

$AB = 6$  cm.

$XP = 12.5$  cm.

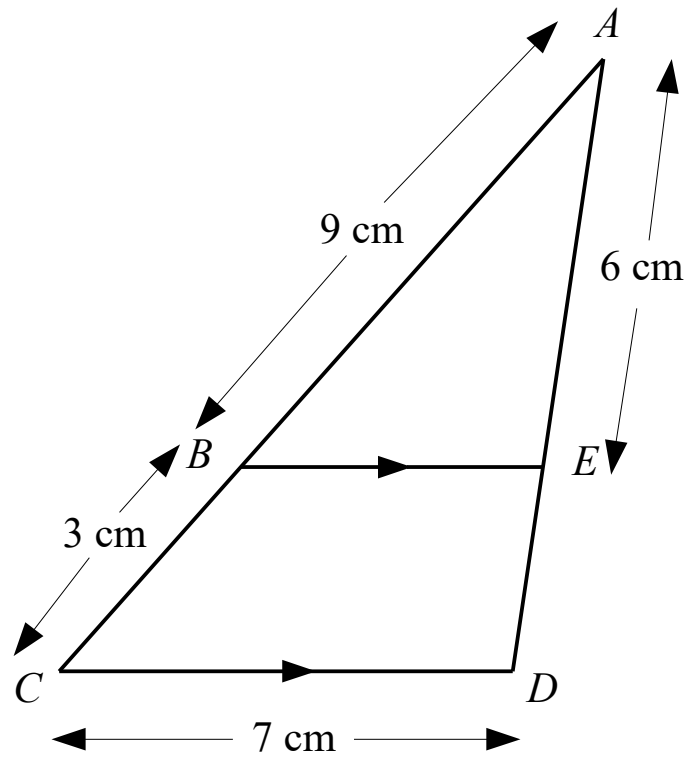
$XY = 15$  cm.

Work out the length of  $BP$ .

..... cm

**(Total for Question 1 is 3 marks)**

2



$BE$  is parallel to  $CD$ .

$AB = 9$  cm,  $BC = 3$  cm,  $CD = 7$  cm,  $AE = 6$  cm.

- (a) Calculate the length of  $ED$ .

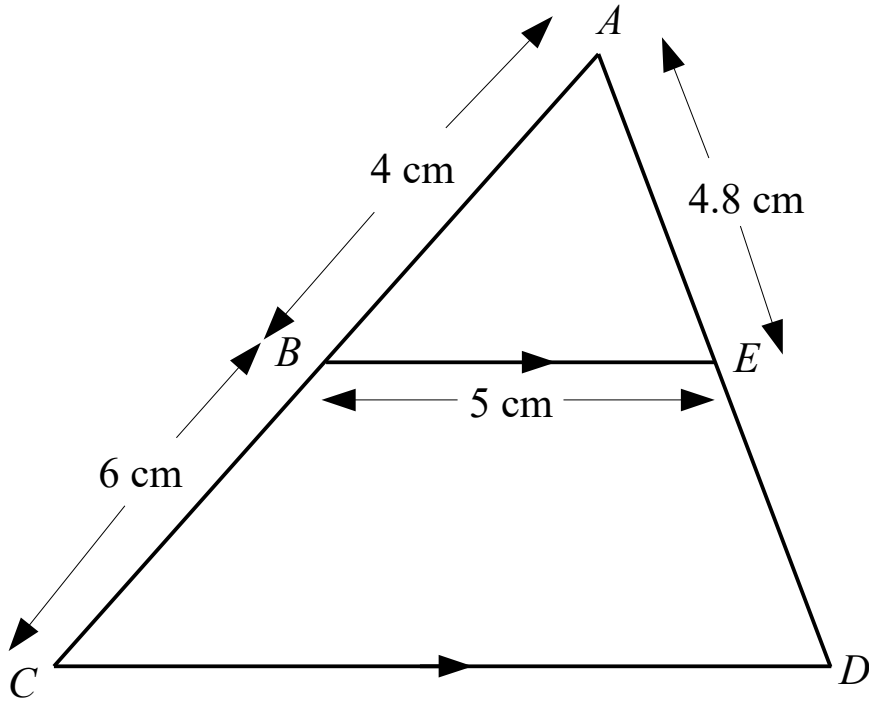
..... cm  
(2)

- (b) Calculate the length of  $BE$ .

..... cm  
(2)

**(Total for Question 2 is 4 marks)**

3



*BE* is parallel to *CD*.  
*ABC* and *AED* are straight lines.  
 $AB = 4$  cm,  $BC = 6$  cm,  $BE = 5$  cm,  $AE = 4.8$  cm.

(a) Calculate the length of *CD*.

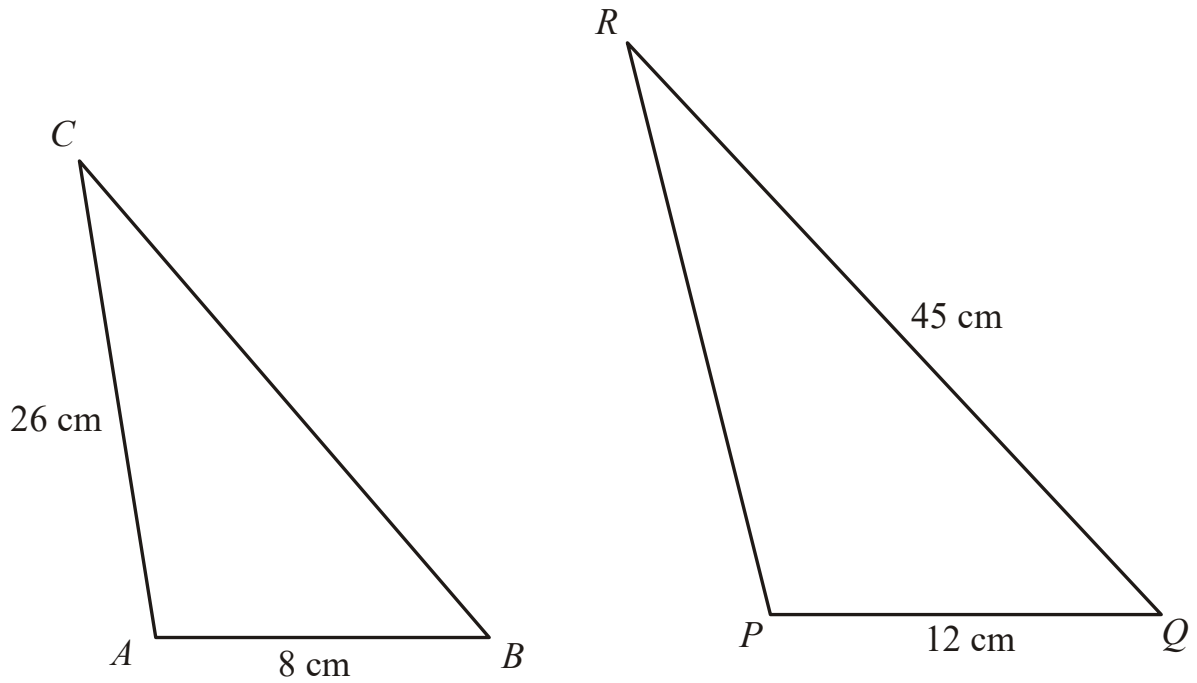
..... cm  
(2)

(b) Calculate the length of *ED*.

..... cm  
(2)

**(Total for Question 3 is 4 marks)**

4



The two triangles ABC and PQR are mathematically similar.

Angle A = angle P.

Angle B = angle Q.

AB = 8 cm.

AC = 26 cm.

PQ = 12 cm.

QR = 45 cm.

(a) Calculate the length of  $PR$ .

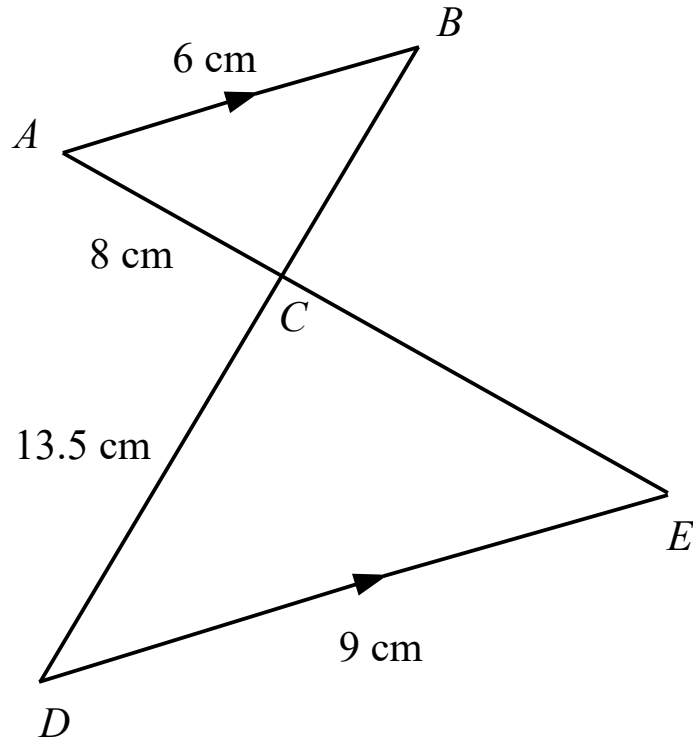
..... cm  
(2)

(b) Calculate the length of  $BC$ .

..... cm  
(2)

**(Total for Question 4 is 4 marks)**

5



$AB$  is parallel to  $DE$ .  
 $ACE$  and  $BCD$  are straight lines.  
 $AB = 6$  cm,  
 $AC = 8$  cm,  
 $CD = 13.5$  cm,  
 $DE = 9$  cm.

(a) Calculate the length of  $CE$ .

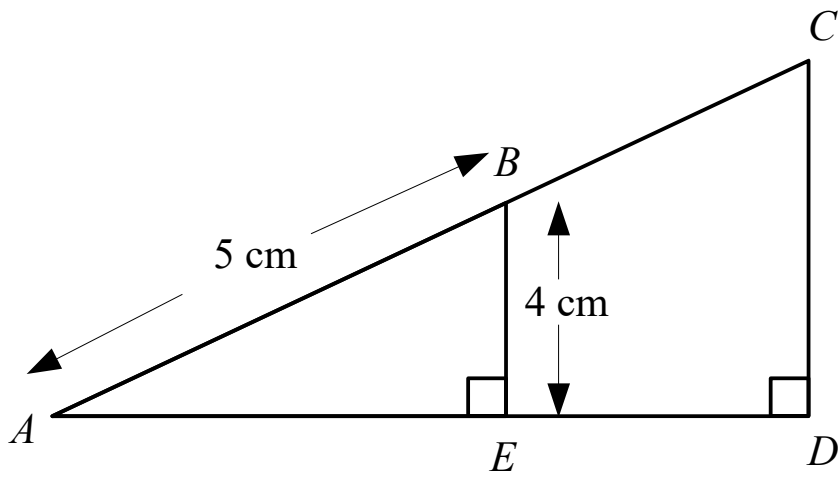
..... cm  
(2)

(b) Calculate the length of  $BC$ .

..... cm  
(2)

**(Total for Question 5 is 4 marks)**

6



$AB: AC = 1: 3$

- (a) Calculate the length of  $CD$ .

..... cm  
(2)

- (b) Calculate the length of  $BC$ .

..... cm  
(2)

**(Total for Question 6 is 4 marks)**

7



A 20 Euro note is a rectangle 133 mm long and 72 mm wide.  
A 500 Euro Note is a rectangle 160 mm long and 82 mm wide.

Show that the two rectangles are not mathematically similar.

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**(Total for Question 7 is 3 marks)**