1.

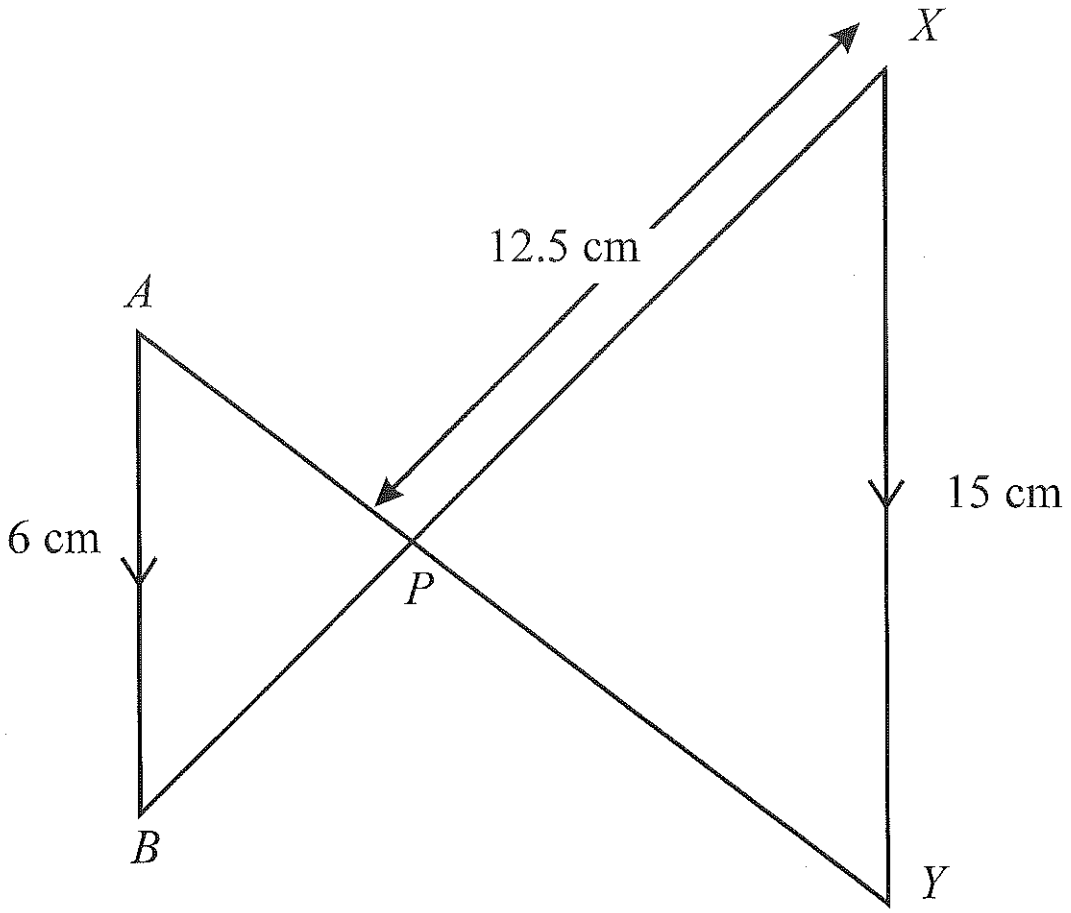


Diagram NOT accurately drawn

AB is parallel to XY.
The lines AY and BX intersect at P.
AB = 6 cm.
XP = 12.5 cm.
XY = 15 cm.

Scale factor $= \frac{15}{6} = \frac{5}{2} = 2.5$

Work out the length of BP.

$\frac{12.5}{2.5} = 5$

.....5..... cm (3)

2.

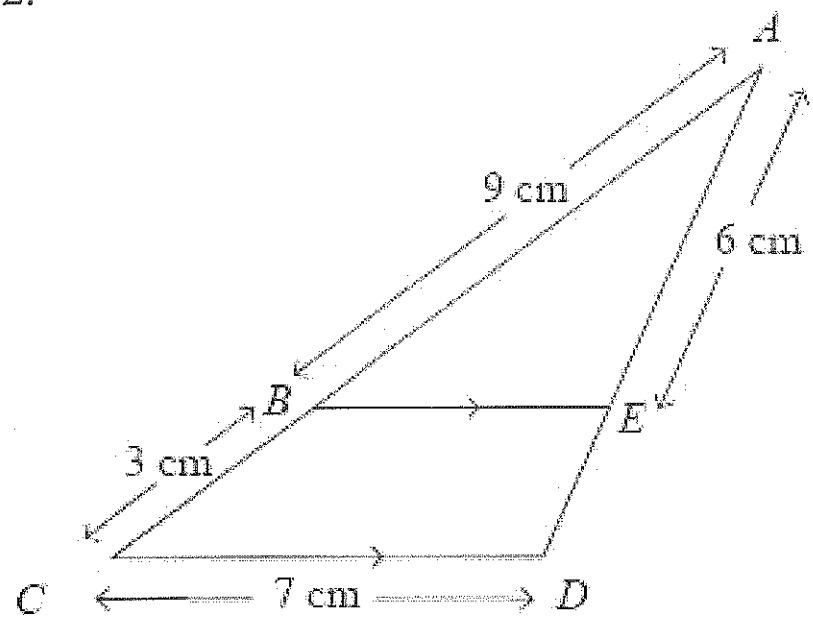
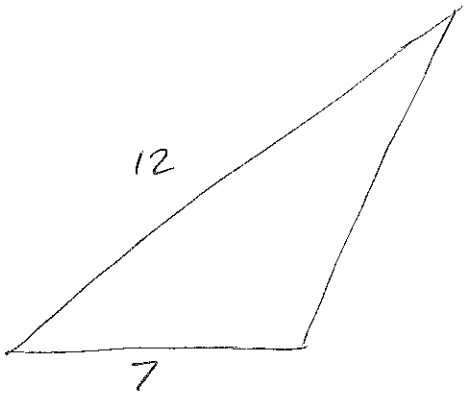
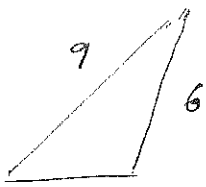


Diagram **NOT** accurately drawn





Scale factor $\frac{12}{9} = \frac{4}{3}$

BE is parallel to CD.
AB = 9 cm, BC = 3 cm, CD = 7 cm, AE = 6 cm.

(a) Calculate the length of ED.

$6 \times \frac{4}{3} = 8$

.....2..... cm (2)

(b) Calculate the length of BE.

$7 \div \frac{4}{3}$

.....5.25..... cm (2)

$7 \times \frac{3}{4} = \frac{21}{4}$

3.

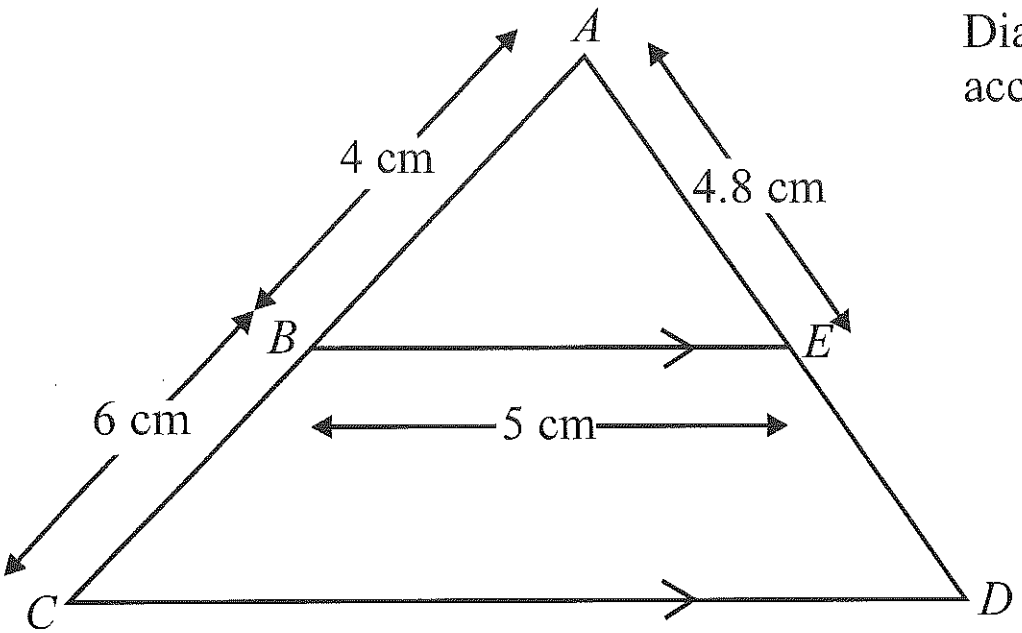


Diagram **NOT** accurately drawn

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

Scale factor $= \frac{10}{4} = \frac{5}{2} = 2.5$

(a) Calculate the length of CD.

5×2.5

12.5 cm (2)

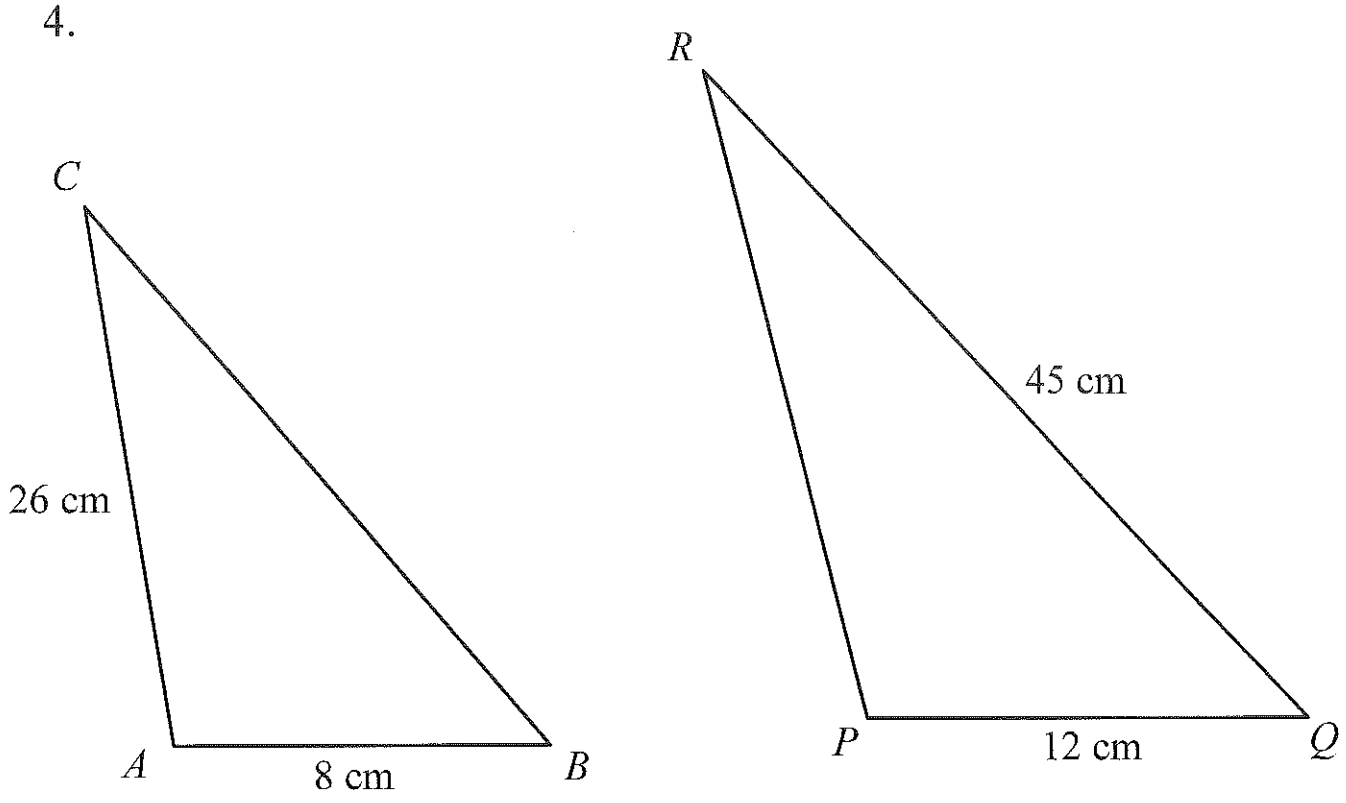
(b) Calculate the length of ED.

$4.8 \times 2.5 = 12$

7.2 cm (2)

$12 - 4.8 = 7.2$

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.

Scale factor = $\frac{45}{26}$ $\frac{12}{8} = \frac{3}{2} = 1.5$

(a) Calculate the length of PR.

26×1.5

...3.9..... cm (2)

(b) Calculate the length of BC.

$45 \div 1.5$

...30..... cm (2)

5.

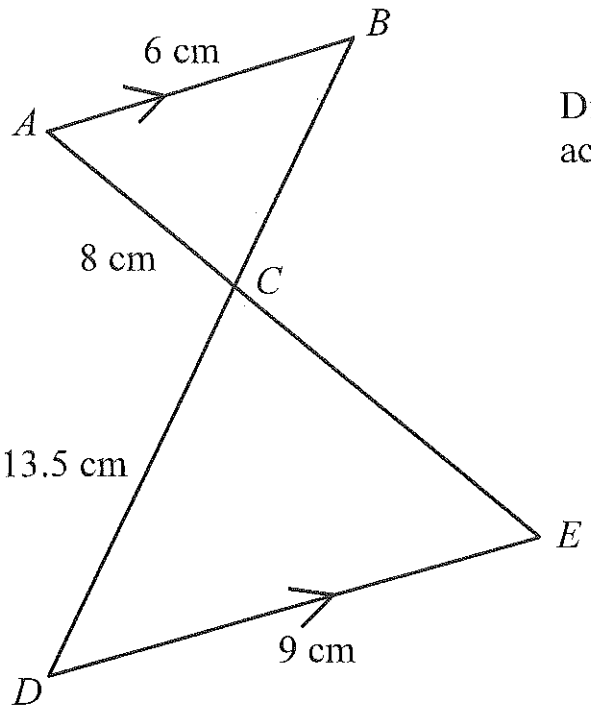


Diagram **NOT** accurately drawn

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

Scale factor $= \frac{9}{6} = 1.5$

(a) Calculate the length of CE.

8×1.5

.....12..... cm (2)

(b) Calculate the length of BC.

$13.5 \div 1.5$

.....9..... cm (2)

6.

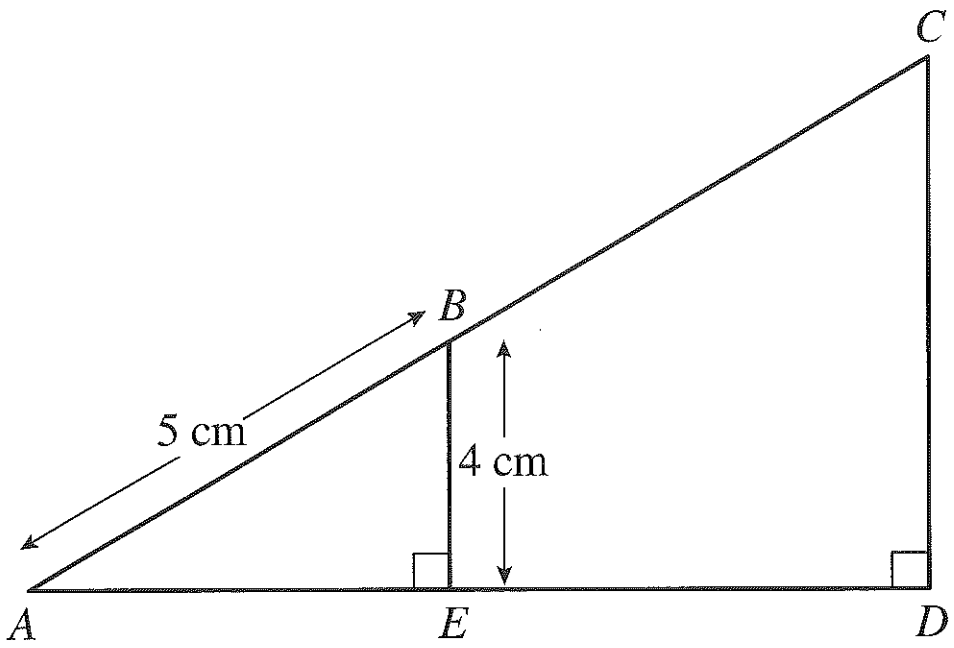


Diagram **NOT** accurately drawn

AB: AC = 1: 3

↑ scale factor 3

(a) Calculate the length of CD.

4 × 3

.....12..... cm (2)

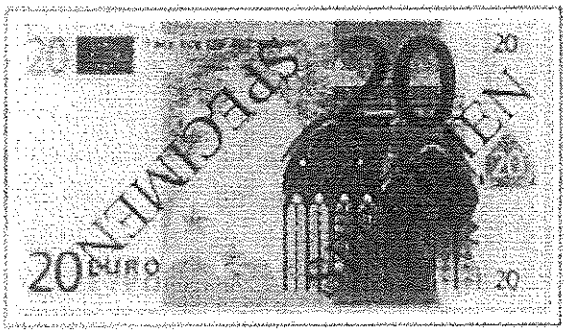
(b) Calculate the length of BC.

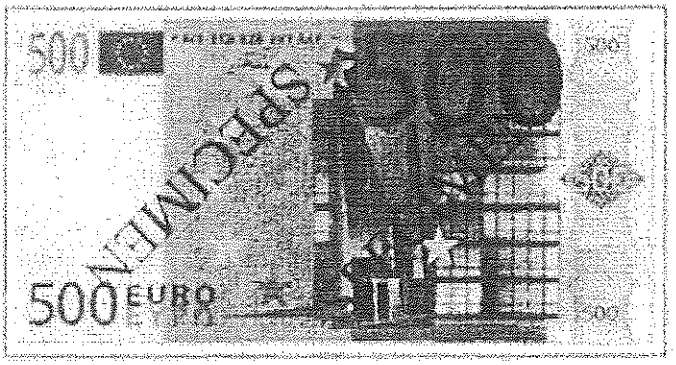
5 × 3 = 15

15 − 5

.....10..... cm (2)

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.

length: $\frac{160}{133} = 1.203$ (3dp)

width: $\frac{82}{72} = 1.139$ (3dp)

The scale for length and width are not the same.

(3)