



Name: _____ **Date:** _____ **Score:** _____ / 47

- 1** Rectangle A is 4 cm by 6 cm. Rectangle B is 8 cm by 10 cm.

Sam says, "Each side of rectangle B is 4 cm longer than the matching side of rectangle A, so the rectangles are similar."

Explain why Sam is wrong.

(1 mark)

Answer _____

- 2** Triangle ABC is similar to triangle PQR.

AB corresponds to PQ, and BC corresponds to QR.

AB = 6 cm, PQ = 9 cm and BC = 8 cm.

Work out the length of QR.

(2 marks)

Answer _____

- 3** Triangle ABC is similar to triangle PQR.

AB corresponds to PQ, BC corresponds to QR and AC corresponds to PR.

AB : PQ = 3 : 7

AC = 15 cm and BC = 9 cm.

a. Work out the length of PR.

b. Work out the length of QR.

(3 marks)

Answer _____

- 4** In triangle ABC, angle A = 35° and angle B = 80° .

In triangle DEF, angle D = 80° and angle E = 65° .

Show that triangle ABC is similar to triangle DEF.

(2 marks)

Answer _____

- 5** A photograph is 15 cm long and 10 cm wide.
The photograph is enlarged to make a print that is mathematically similar to it.
The print is 24 cm long.
- Work out the scale factor of the enlargement.
 - Work out the width of the print.

(3 marks)

Answer _____

- 6** Triangle ABC is isosceles with $AB = AC = 9$ cm and $BC = 6$ cm.
Triangle DEF is isosceles and is similar to triangle ABC, with $DE = DF = 15$ cm.
- Work out the scale factor from triangle ABC to triangle DEF.
 - Work out the length of EF.

(3 marks)

Answer _____

- 7** Triangle ABC is similar to triangle DEF.
AB corresponds to DE, BC corresponds to EF, and AC corresponds to DF.
 $AB = 5$ cm, $BC = 7$ cm, $DE = 7.5$ cm and $DF = 12$ cm.
- Work out the length of EF.
 - Work out the length of AC.

(4 marks)

Answer _____

8

Triangle ABC has sides $AB = 4 \text{ cm}$, $BC = 6 \text{ cm}$ and $AC = 8 \text{ cm}$.

Triangle DEF has sides $DE = 6 \text{ cm}$, $EF = 9 \text{ cm}$ and $DF = 12 \text{ cm}$.

- Show that triangle ABC is similar to triangle DEF.
- Triangle PQR is similar to triangle ABC. PQ corresponds to AB and $PQ = 10 \text{ cm}$. Work out the perimeter of triangle PQR.
- Triangle GHI is congruent to triangle ABC. Write down the scale factor from triangle ABC to triangle GHI.

(5 marks)

Answer _____

9

In triangle ABC, D is a point on AB and E is a point on AC.

DE is parallel to BC.

$AD = 4 \text{ cm}$, $DB = 6 \text{ cm}$ and $DE = 5 \text{ cm}$.

Work out the length of BC.

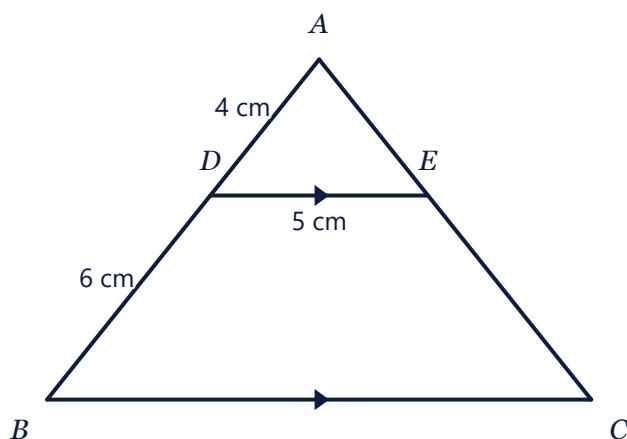


Diagram NOT accurately drawn

(3 marks)

Answer _____

10 AB is parallel to DE.

The straight lines AE and BD cross at the point C.

AC = 9 cm, CE = 6 cm, AB = 12 cm and CD = 5 cm.

a. Work out the length of DE.

b. Work out the length of BC.

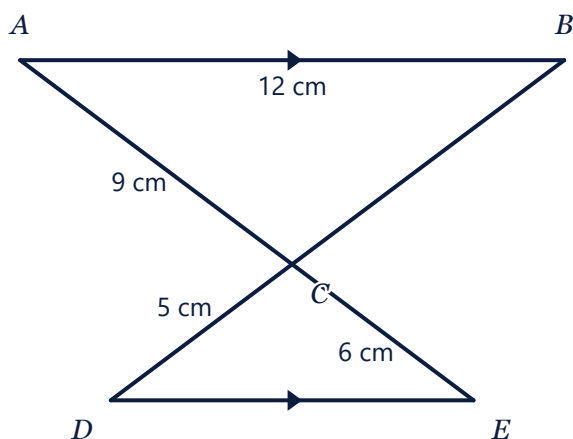


Diagram NOT accurately drawn

(4 marks)

Answer _____

11 Triangle ABC is similar to triangle DEF.

AB corresponds to DE and BC corresponds to EF.

AB = 6 cm, DE = 9 cm, BC = x cm and EF = $(x + 4)$ cm.

Work out the value of x and the length of EF.

(4 marks)

Answer _____

12 In triangle ADE, B is a point on AD and C is a point on AE.

BC is parallel to DE.

AB = 6 cm, BD = 3 cm and BC = 8 cm.

The area of triangle ABC is 24 cm^2 .

- Work out the length of DE.
- Work out the area of the trapezium BDEC.

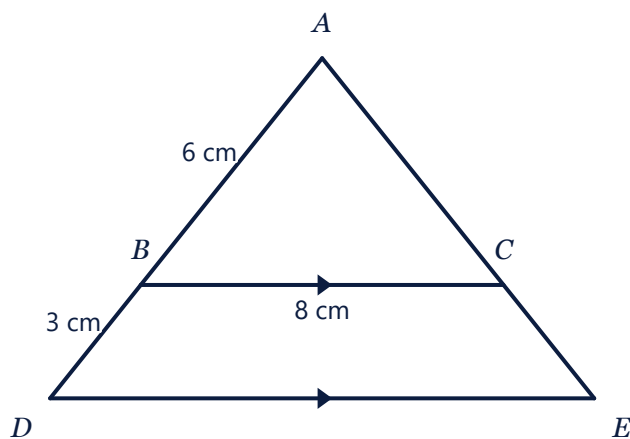


Diagram NOT accurately drawn

(4 marks)

Answer _____

- 13** In triangle PQR, angle PQR = 90° , PQ = 6 cm, QR = 8 cm and PR = 10 cm.
S is the point on PR such that QS is perpendicular to PR.
Work out the length of QS.

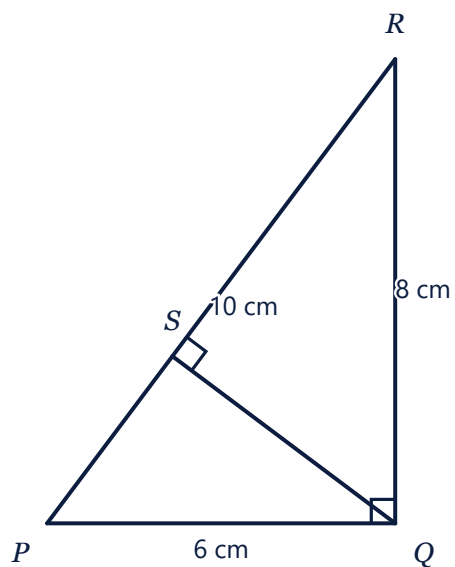


Diagram NOT accurately drawn

(4 marks)

Answer _____

14 In triangle ABC, D is a point on AB.

Angle ACD = angle ABC.

AC = 8 cm and AD = 4 cm.

- Prove that triangle ACD is similar to triangle ABC.
- Work out the length of BD.

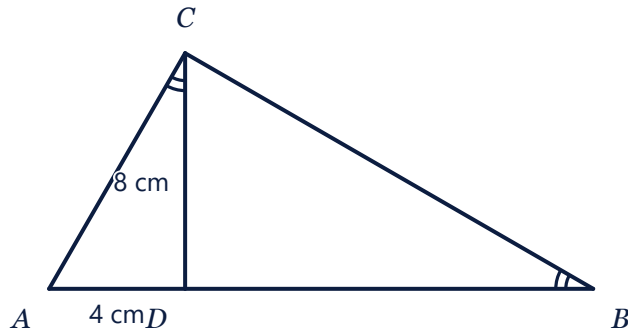


Diagram NOT accurately drawn

(5 marks)

Answer _____

End of questions | Total 47 marks