



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Congruence & Similarity · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☐ Secure

☒ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Congruence & Similarity

Total marks available: 75

● Congruence & Similarity

Q1

[2 marks]

Triangle ABC is congruent to triangle XYZ. A corresponds to X, B corresponds to Y and C corresponds to Z.

AB = 4 cm, BC = 6 cm and angle ABC = 45° .

(a) Write down the length of XY. (b) Write down the size of angle XYZ.

Q2

[2 marks]

Triangle ABC has AB = 4 cm, BC = 8 cm, CA = 9 cm. Triangle DEF has DE = 4 cm, EF = 8 cm, FD = 9 cm. Which condition shows that triangle ABC is congruent to triangle DEF?

Q3

[2 marks]

Triangle ABC has $AB = 11$ cm, $BC = 6$ cm, $CA = 7$ cm. Triangle DEF has $DE = 11$ cm, $EF = 6$ cm, $FD = 7$ cm. Which condition shows that triangle ABC is congruent to triangle DEF?

Q4

[2 marks]

Triangle ABC is congruent to triangle XYZ. A corresponds to Y, B corresponds to Z and C corresponds to X.

$AB = 11$ cm, $BC = 4$ cm and $\text{angle } ABC = 45^\circ$.

(a) Write down the length of XZ. (b) Write down the size of angle YZX.

Q5

[2 marks]

Triangle ABC is congruent to triangle PQR. A corresponds to R, B corresponds to P and C corresponds to Q.

AB = 6 cm, BC = 8 cm and angle ABC = 110° .

(a) Write down the length of PR. (b) Write down the size of angle RPQ.

Q6

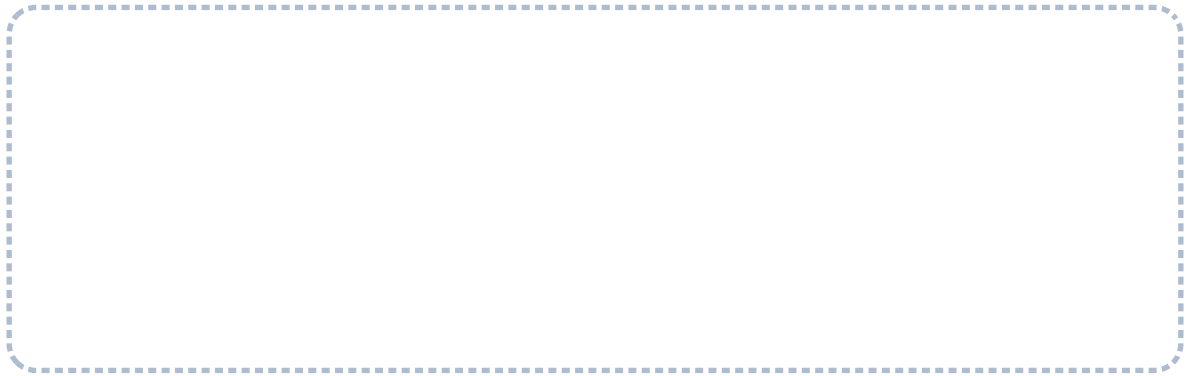
[2 marks]

Triangle ABC has AB = 4 cm, BC = 12 cm, and angle ABC = 80° . Triangle DEF has DE = 4 cm, EF = 12 cm, and angle DEF = 80° . Which condition shows that triangle ABC is congruent to triangle DEF?

Q7

[2 marks]

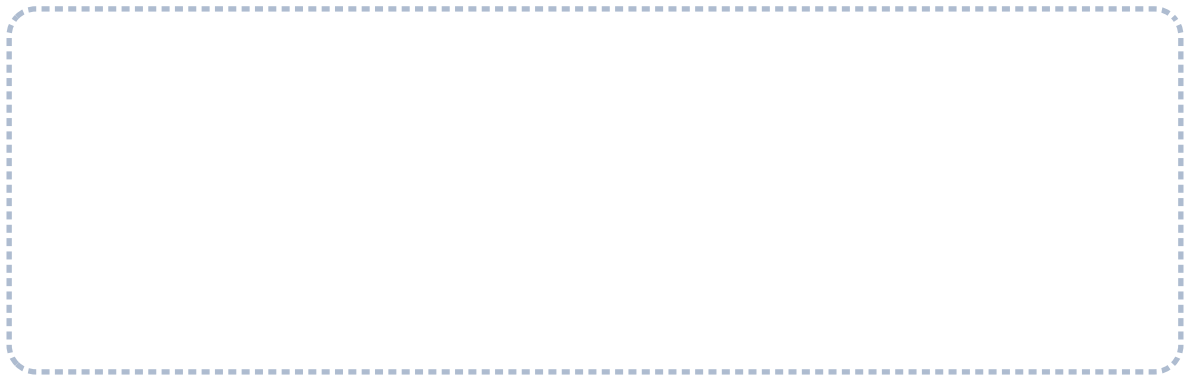
Triangle ABC has $AB = 10$ cm, $BC = 7$ cm, $CA = 12$ cm. Triangle DEF has $DE = 10$ cm, $EF = 7$ cm, $FD = 12$ cm. Which condition shows that triangle ABC is congruent to triangle DEF?



Q8

[2 marks]

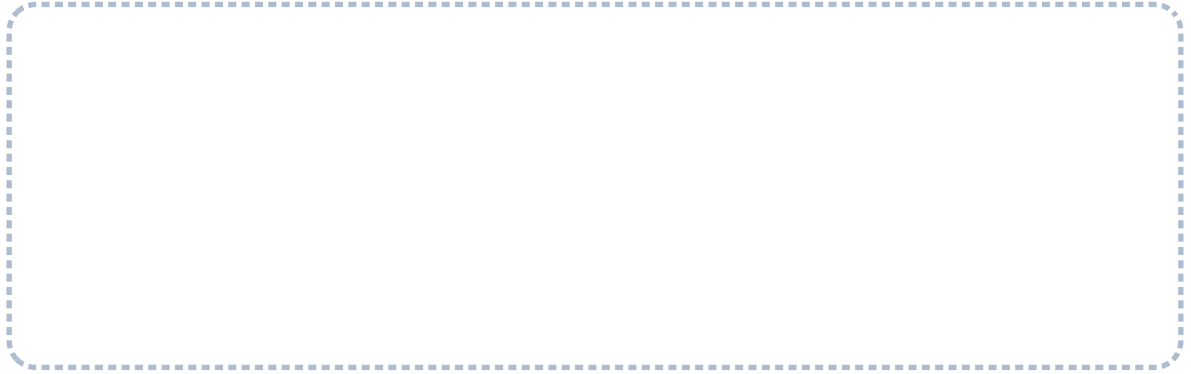
Triangle ABC has $AB = 12$ cm, $BC = 10$ cm, and angle $ABC = 35^\circ$. Triangle DEF has $DE = 12$ cm, $EF = 10$ cm, and angle $DEF = 35^\circ$. Which condition shows that triangle ABC is congruent to triangle DEF?



Q9

[2 marks]

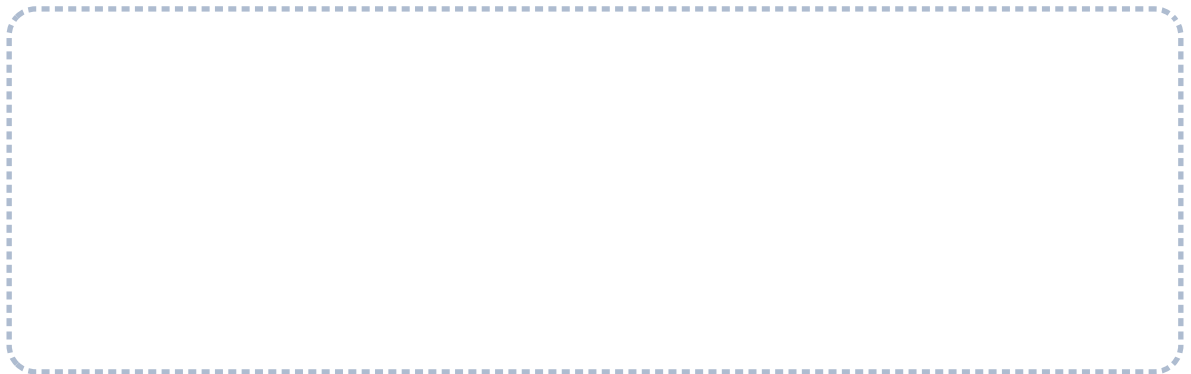
Triangle ABC has $AB = 12$ cm, $BC = 6$ cm, and angle $ABC = 70^\circ$. Triangle DEF has $DE = 12$ cm, $EF = 6$ cm, and angle $DEF = 70^\circ$. Which condition shows that triangle ABC is congruent to triangle DEF?



Q10

[2 marks]

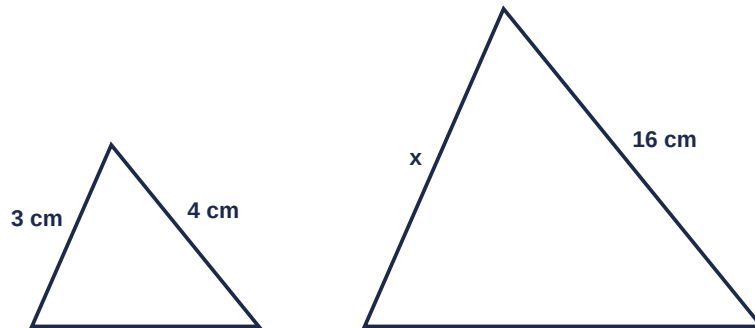
Triangle ABC has angle $ABC = 65^\circ$, angle $BCA = 85^\circ$, and $BC = 5$ cm. Triangle DEF has angle $DEF = 65^\circ$, angle $EFD = 85^\circ$, and $EF = 5$ cm. Which condition shows that triangle ABC is congruent to triangle DEF?



Q11

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 4 cm and 16 cm are marked. Use the scale factor to find the length marked x .



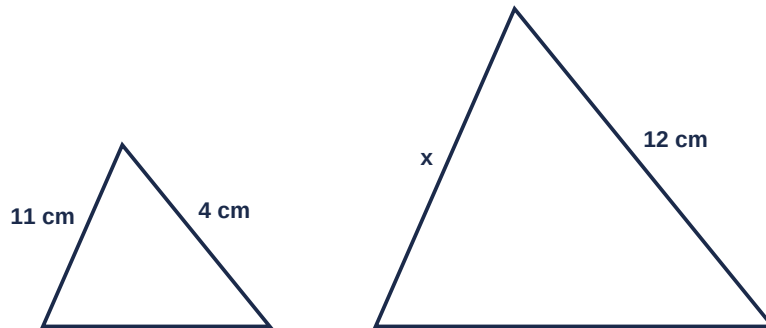
(diagrams not drawn to scale)

A large dashed rectangular box for the student's answer.

Q12

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 4 cm and 12 cm are marked. Use the scale factor to find the length marked x .



(diagrams not drawn to scale)

Q13

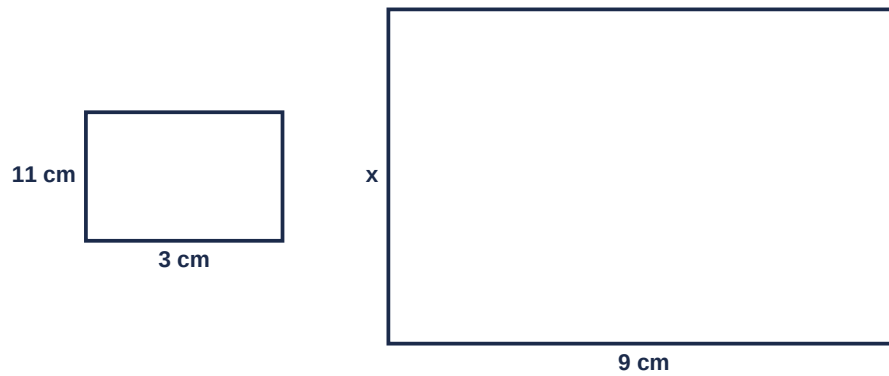
[2 marks]

Rectangle A is 2 cm by 6 cm. Rectangle B is 8 cm by 23 cm. Are rectangles A and B similar? Show how you decide.

Q14

[3 marks]

Rectangle ABCD is similar to rectangle PQRS. Corresponding lengths 3 cm and 9 cm are marked. Use the scale factor to find the length marked x .



Q15

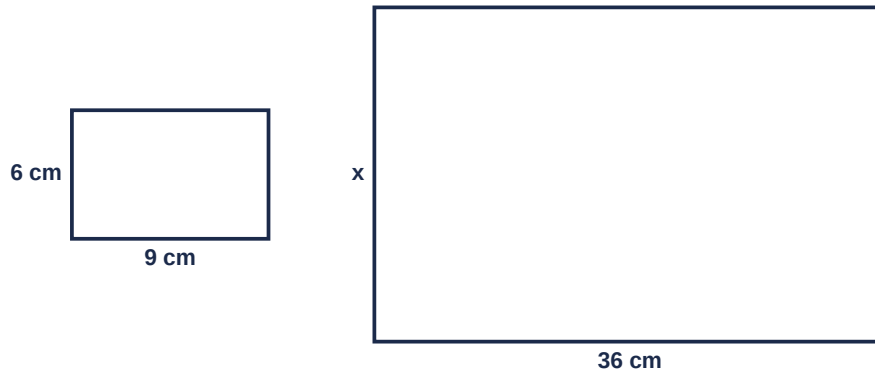
[2 marks]

Rectangle A is 2 cm by 7 cm. Rectangle B is 4 cm by 15 cm. Are rectangles A and B similar? Show how you decide.

Q16

[3 marks]

Rectangle ABCD is similar to rectangle PQRS. Corresponding lengths 9 cm and 36 cm are marked. Use the scale factor to find the length marked x .



Area for working out the solution to Q16.

Q17

[2 marks]

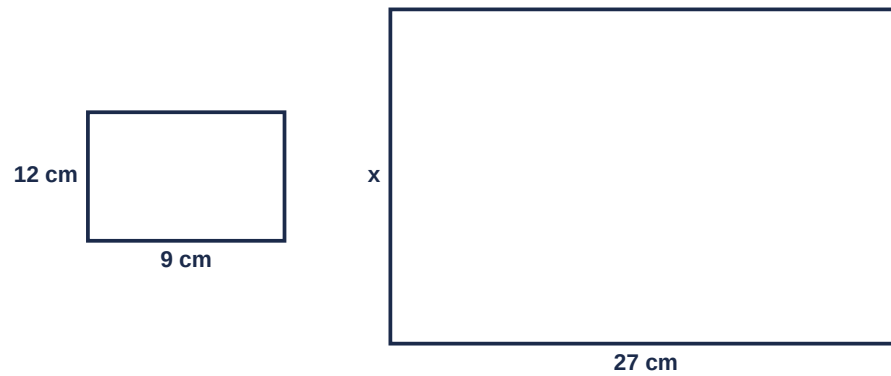
Rectangle A is 5 cm by 7 cm. Rectangle B is 10 cm by 13 cm. Are rectangles A and B similar? Show how you decide.

Area for working out the solution to Q17.

Q18

[3 marks]

Rectangle ABCD is similar to rectangle PQRS. Corresponding lengths 9 cm and 27 cm are marked. Use the scale factor to find the length marked x .



Q19

[2 marks]

Rectangle A is 5 cm by 8 cm. Rectangle B is 20 cm by 31 cm. Are rectangles A and B similar? Show how you decide.

Q20

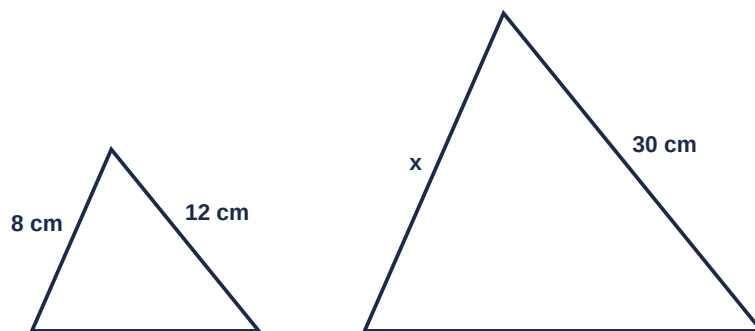
[2 marks]

Rectangle A is 4 cm by 9 cm. Rectangle B is 16 cm by 38 cm. Are rectangles A and B similar? Show how you decide.

Q21

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 12 cm and 30 cm are marked. Find the length marked x .

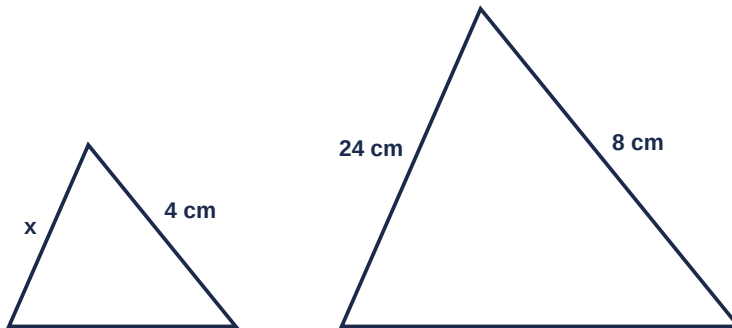


(diagrams not drawn to scale)

Q22

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 4 cm and 8 cm are marked. Find the length marked x on the smaller shape.



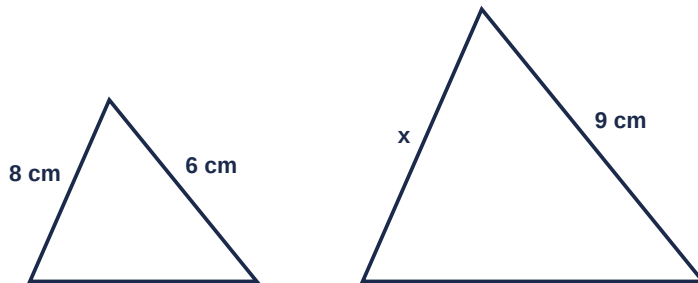
(diagrams not drawn to scale)

A large dashed rectangular box for writing the answer.

Q23

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 6 cm and 9 cm are marked. Find the length marked x .



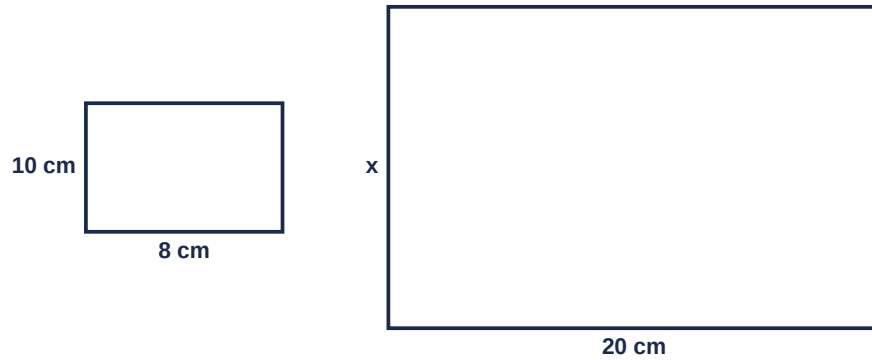
(diagrams not drawn to scale)

A large dashed rectangular box for the student's answer.

Q24

[3 marks]

Rectangle ABCD is similar to rectangle PQRS. Corresponding lengths 8 cm and 20 cm are marked. Find the length marked x .

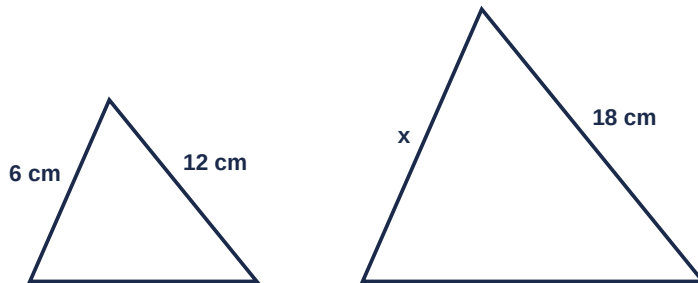


A large dashed rectangular box for the student's answer.

Q25

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 12 cm and 18 cm are marked. Find the length marked x .



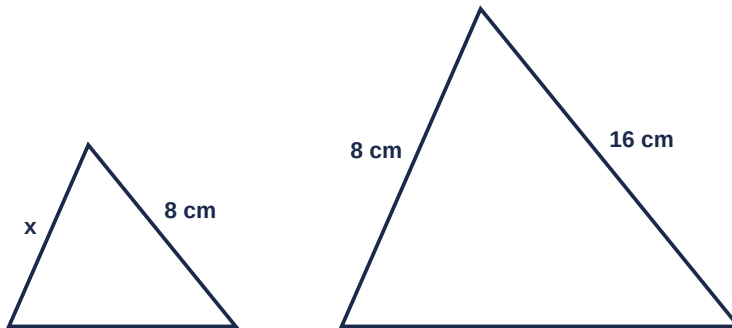
(diagrams not drawn to scale)

A large dashed rectangular box for writing the answer.

Q26

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 8 cm and 16 cm are marked. Find the length marked x on the smaller shape.



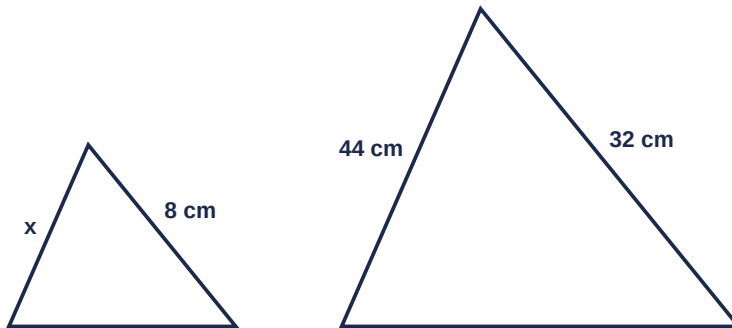
(diagrams not drawn to scale)

A large dashed rectangular box for writing the answer.

Q27

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 8 cm and 32 cm are marked. Find the length marked x on the smaller shape.



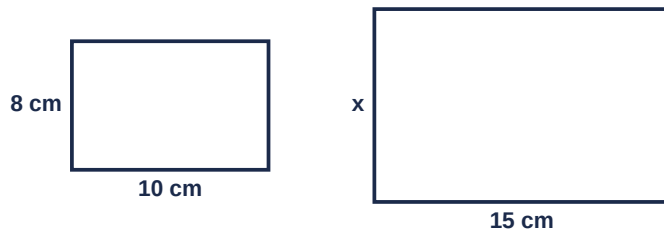
(diagrams not drawn to scale)

A large dashed rectangular box for the student's answer.

Q28

[3 marks]

Rectangle ABCD is similar to rectangle PQRS. Corresponding lengths 10 cm and 15 cm are marked. Find the length marked x .

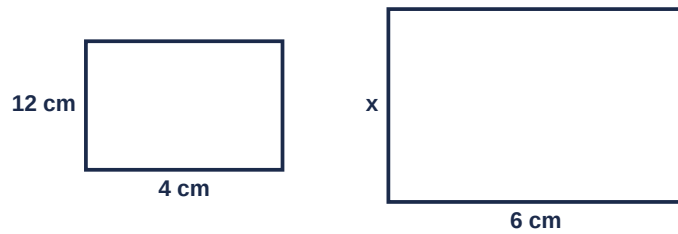


A large dashed rectangular box for the student to show their working.

Q29

[3 marks]

Rectangle ABCD is similar to rectangle PQRS. Corresponding lengths 4 cm and 6 cm are marked. Find the length marked x .

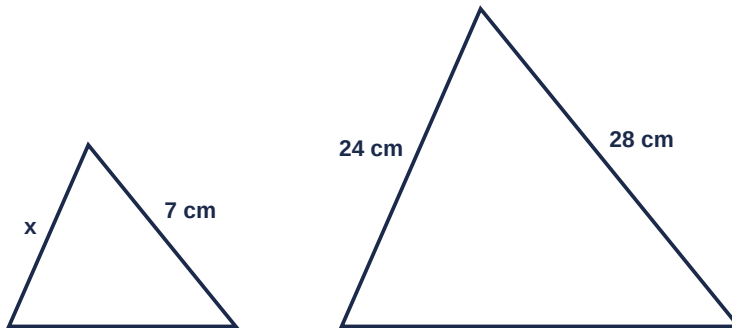


A large dashed rectangular box for working space.

Q30

[3 marks]

Triangle ABC is similar to triangle PQR. Corresponding lengths 7 cm and 28 cm are marked. Find the length marked x on the smaller shape.



(diagrams not drawn to scale)

A large dashed rectangular box for the student's answer.