

FluidMaths

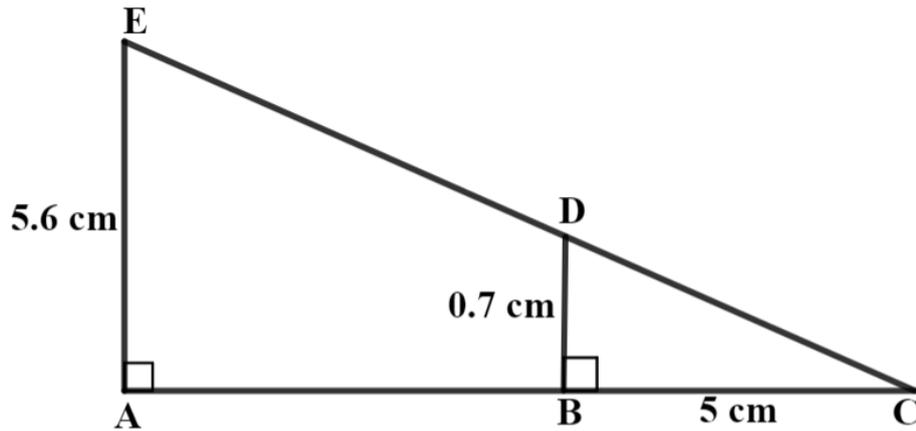
GCSE Mathematics (Grade 9-1)

Problem Solving
Similar Shapes Set 1
Lengths
Questions

Some useful strategies in problem-solving

- Read the question carefully
- Sketch a diagram where applicable
- Take note of key information
- Write down any formulae you may need
- Tackle the problem in bite-size rather than as a whole
- Concentrate on the part of the problem you understand and start from there
- Collaborate with a partner and share ideas
- Use a dictionary to find the meaning of any confusing words
- Check that your answers make sense in the context of the question

1 ACE and BCD are mathematically similar.



$$BC = 5 \text{ cm}$$

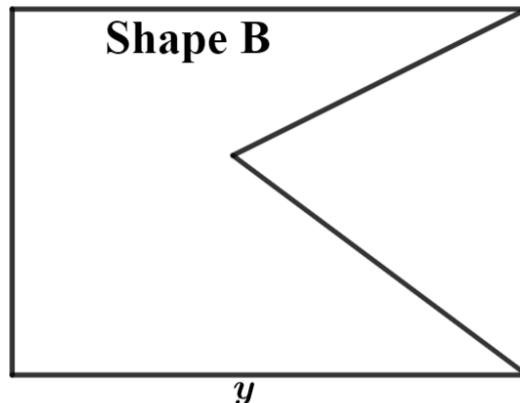
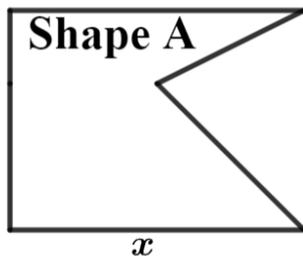
$$AE = 5.6 \text{ cm}$$

$$BD = 0.7 \text{ cm}$$

Calculate the area of the trapezium ABDE?

[3marks]

2 Shape A and Shape B are mathematically similar



The perimeter of shape A is 294 cm

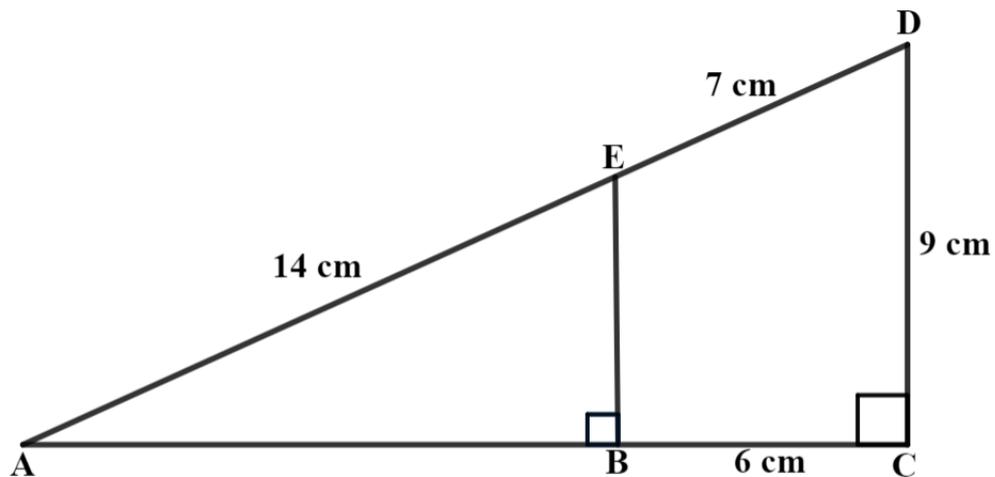
Given that $x : y = 3 : 5$,

what is the perimeter of shape B?

Give your answer in meters

[3marks]

3 ABE and ACD are similar triangles



$AE = 14\text{ cm}$

$ED = 7\text{ cm}$

$CD = 9\text{ cm}$

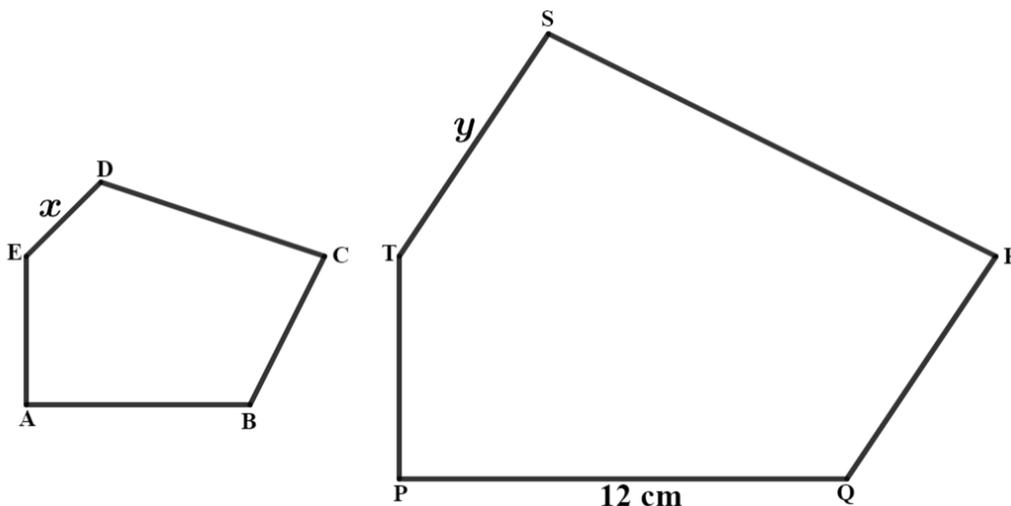
$BC = 6\text{ cm}$

Calculate the area of triangle ABE.

Give your answer to 3 significant figures

[4marks]

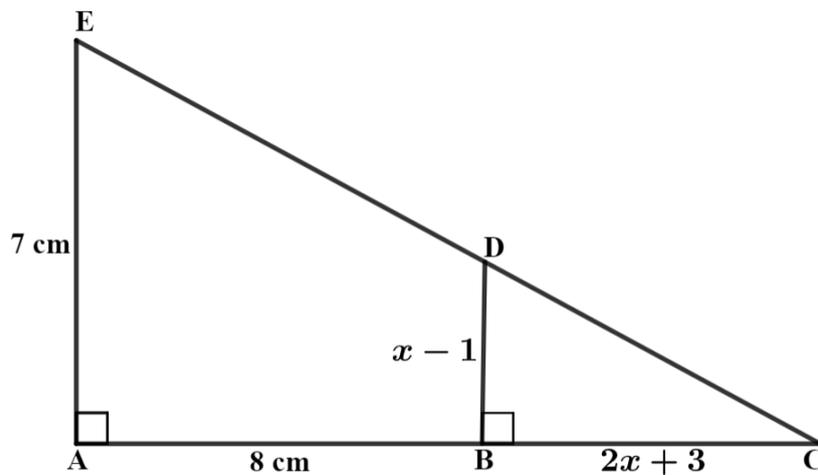
4 ABCDE and PQRST are mathematically similar



Find AB in terms of x and y

[2marks]

5 ACE and BCD are mathematically similar triangles.



$$AB = 8 \text{ cm}$$

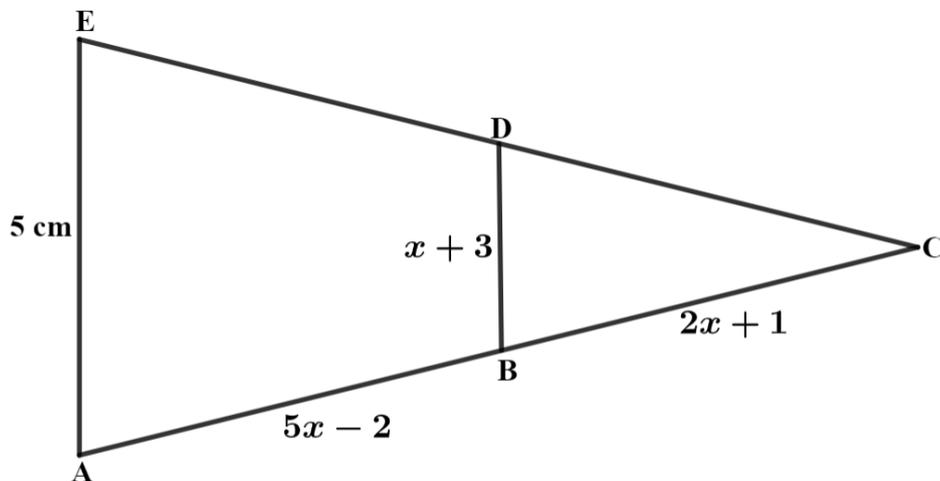
$$BC = 2x + 3$$

$$BD = x - 1$$

$$AE = 7 \text{ cm}$$

Calculate the true value of x to 2 decimal places. [5marks]

6 ACE and BCD are mathematically similar triangles



$$AE = 5 \text{ cm}$$

$$AB = 5x - 2$$

$$BC = 2x + 1$$

$$BD = x + 3$$

Calculate the true value of x . [5marks]