

7.3 Answers

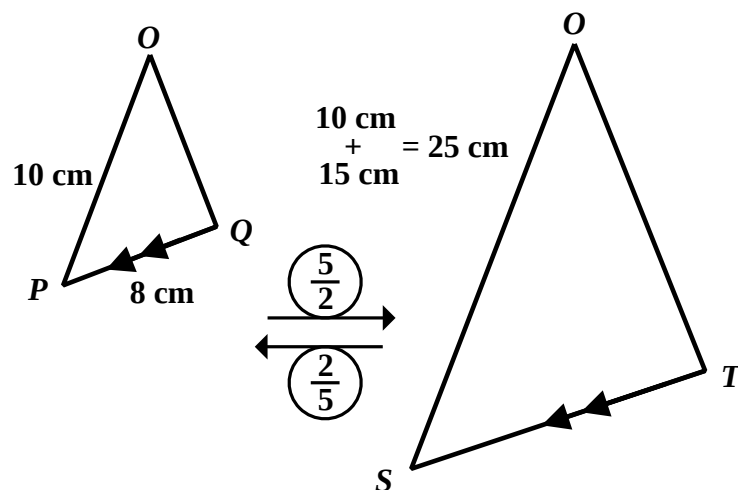
GCSE Mathematics Ratio and Similarity

7.3.1 Solutions to 7.2 Exercise

Answer 1

- (i) Two triangles, drawn separately.

[2 marks]



(ii) $lsf = \frac{25}{10} = \frac{5}{2}$

[2 marks]

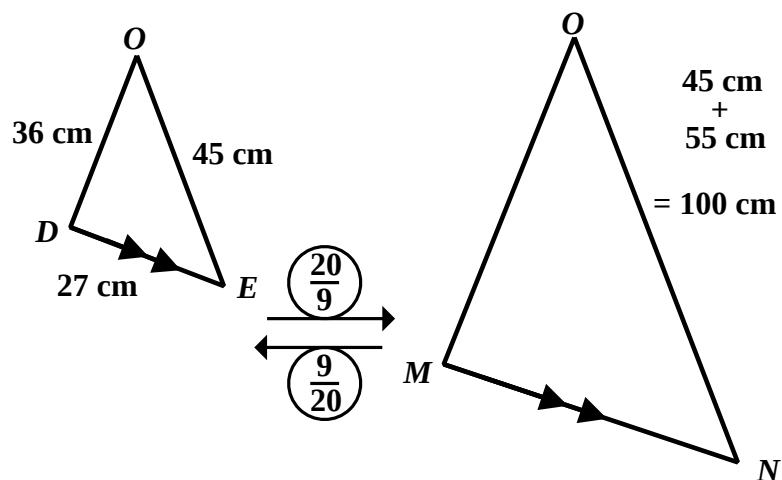
(iii) $length\ ST = 8 \times \frac{5}{2}$
 $= 20\text{ cm}$

[2 marks]

Answer 2

- (i) Two triangles, drawn separately.

[2 marks]



(ii) $\text{length scale factor} = \frac{100}{45} = \frac{20}{9}$

[2 marks]

(iii) $\text{length } MN = 27 \times \frac{20}{9} = 60$ cm

[1 mark]

(iv) $\text{length } OM = 36 \times \frac{20}{9} = 80$ cm

[1 mark]

(v) $\text{length } DM = 80 - 36 = 44$ cm

[1 mark]

Answer 3

- (i) By Pythagoras' Theorem, Length $TC = 15$ cm

[2 marks]

(ii) Therefore, the length scale factor = $\frac{40}{15} = \frac{8}{3}$

Length $LU = \frac{8}{3} \times 9 = 24$ cm

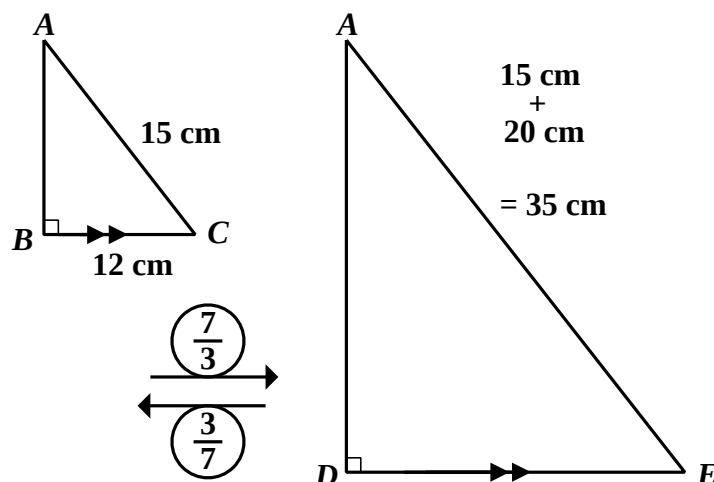
Length $LV = \frac{8}{3} \times 12 = 32$ cm

[2 marks]

Answer 4

- (i) Two triangles, drawn separately.

[2 marks]



- (ii) $AB = 9 \text{ cm}$

[2 marks]

- (iii) $lsf = \frac{7}{3}$

[2 marks]

- (iv) $asf = \frac{49}{9}$

[1 mark]

- (v) $\text{Area } \triangle ABC = 54 \text{ cm}^2$

[1 mark]

- (vi) $\text{Area } \triangle ADE = \frac{49}{9} \times 54 = 294 \text{ cm}^2$

[1 mark]

- (vii) $\text{Area trapezium } BDEC = 294 - 54 = 240 \text{ cm}^2$

[2 marks]

Answer 5

$$x = 10 \text{ cm} \quad y = 8 \text{ cm}$$

[6 marks]

Answer 6

Designed so that using the 115.5 instead of $115.5 + 2.5$ gets the wrong answer.

[6 marks]