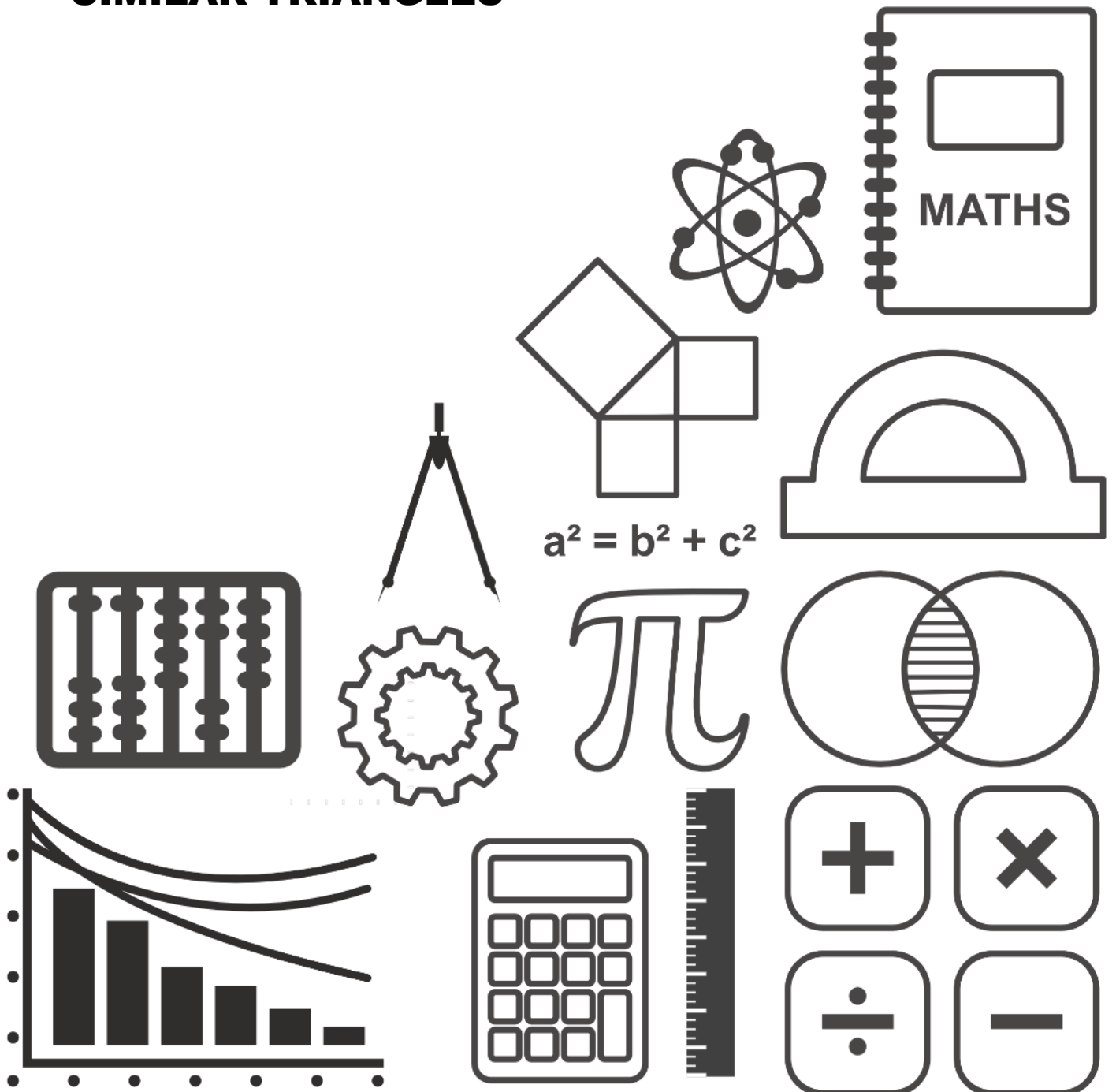
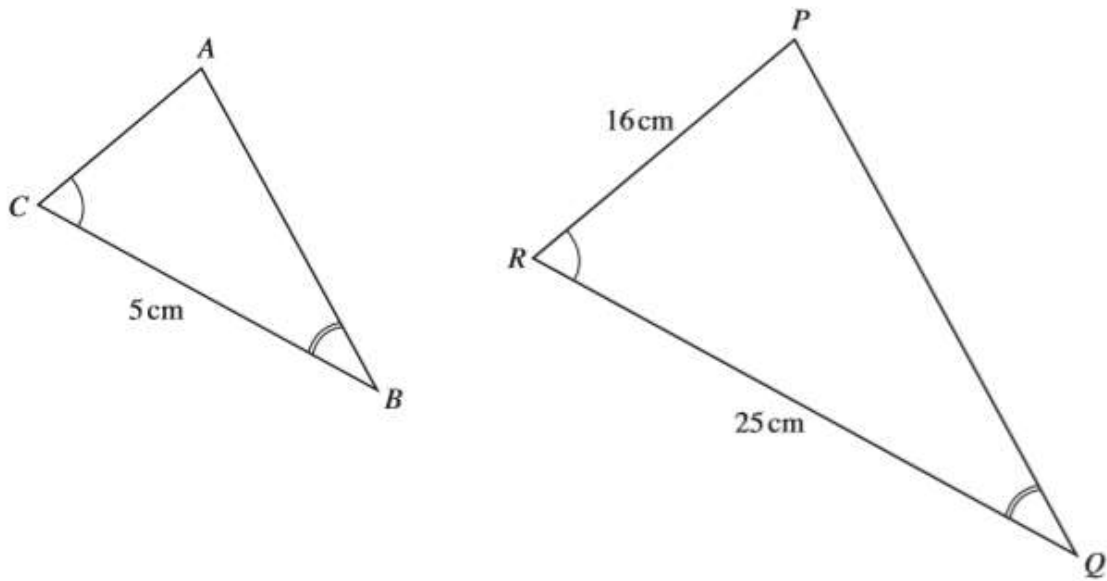


# MATHSDIY

## GCSE TOPIC BOOKLET SIMILAR TRIANGLES



1. The diagram shows two similar triangles,  $ABC$  and  $PQR$ .



*Diagram not drawn to scale.*

Given that  $CB = 5\text{ cm}$ ,  $RQ = 25\text{ cm}$  and  $PR = 16\text{ cm}$ , find the length of  $AC$ .

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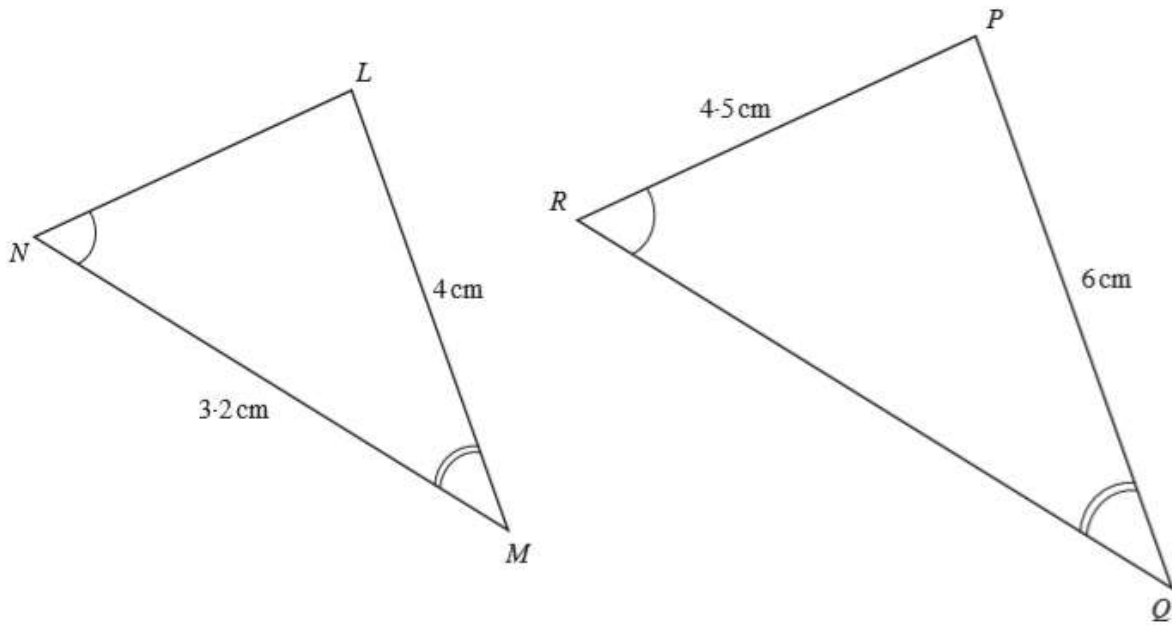
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[2]

2. Triangles  $LMN$  and  $PQR$  are similar, with  $\widehat{LMN} = \widehat{PQR}$ ,  $\widehat{MNL} = \widehat{QRP}$ ,  $LM = 4$  cm,  $MN = 3.2$  cm,  $PR = 4.5$  cm and  $PQ = 6$  cm.



Diagrams not drawn to scale.

Showing all your working, find the length of

- (a)  $RQ$ ,

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[2]

- (b)  $LN$ .

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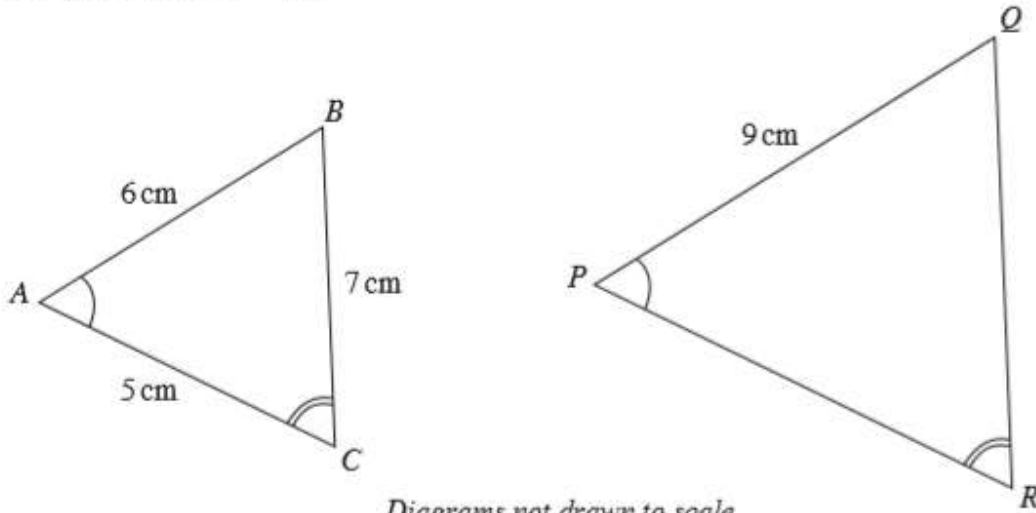
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[2]

3. Triangles  $ABC$  and  $PQR$  are similar, with  $\widehat{BAC} = \widehat{QPR}$ ,  $\widehat{BCA} = \widehat{QRP}$ ,  $AB = 6$  cm,  $BC = 7$  cm,  $AC = 5$  cm and  $PQ = 9$  cm.



Showing all your working, find the length of  $QR$ .

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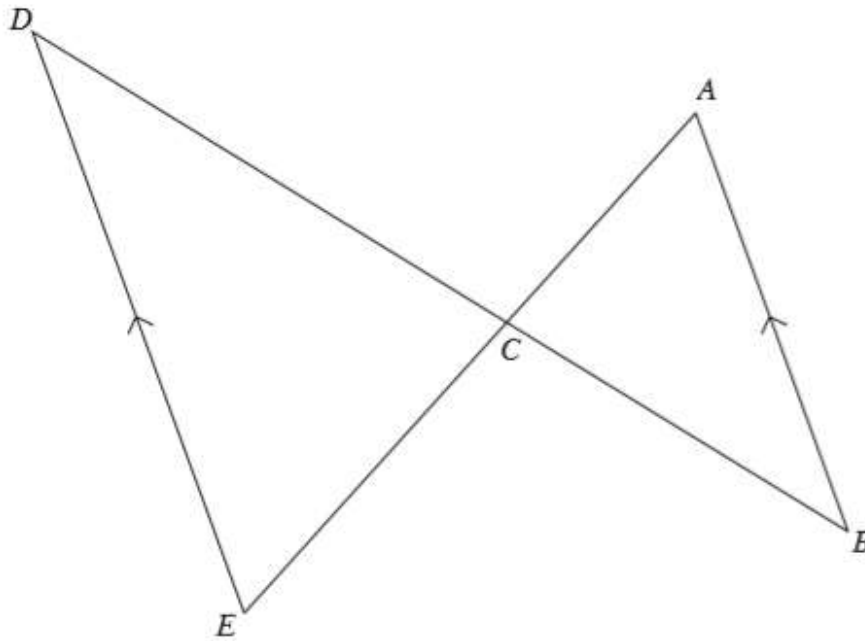


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[2]

4. In the diagram,  $AB$  is parallel to  $DE$ .

(a) Show that triangles  $ABC$  and  $EDC$  are similar.



*Diagram not drawn to scale.*

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[2]

(b) The lengths  $AB = 8$  cm,  $BC = 10$  cm and  $DC = 15$  cm.  
Calculate the length of  $DE$ .

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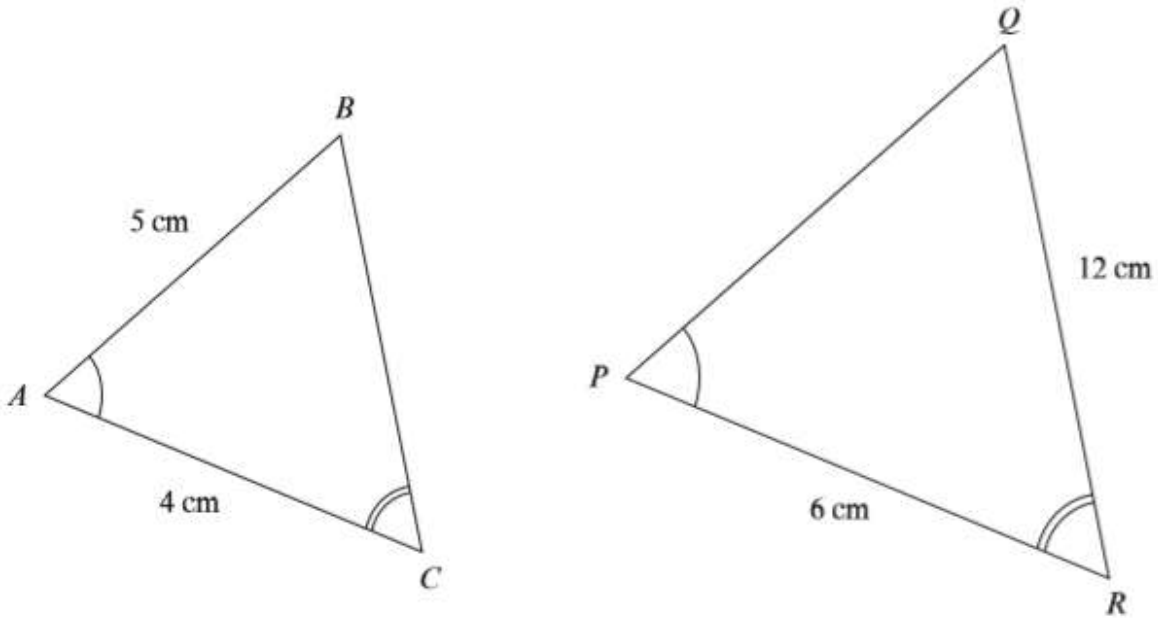
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[2]

5. Triangles  $ABC$  and  $PQR$  are similar, with  $\hat{BAC} = \hat{QPR}$ ,  $\hat{BCA} = \hat{QRP}$ ,  $AB = 5$  cm,  $AC = 4$  cm,  $PR = 6$  cm and  $RQ = 12$  cm.



*Diagrams not drawn to scale.*

Showing all your working, find

- (a) the length of  $QP$ ,

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[2]

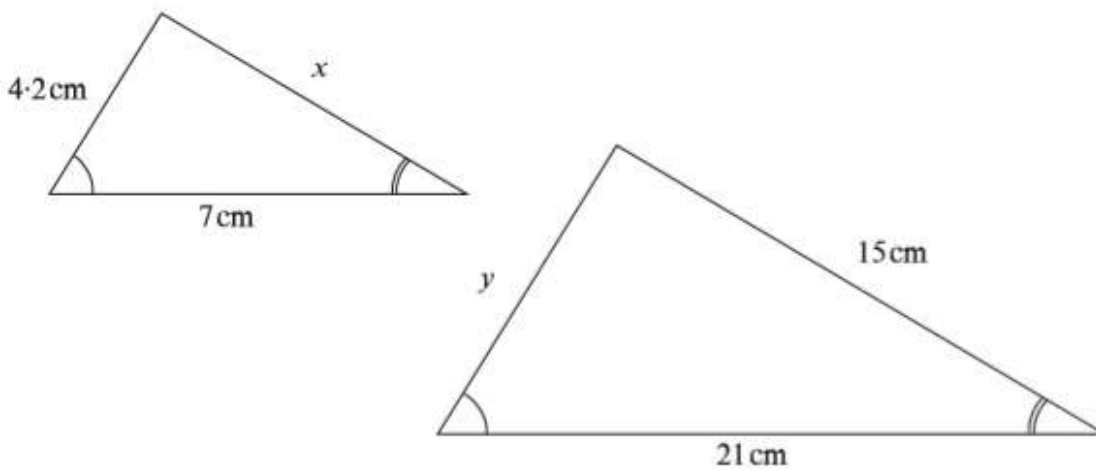
- (b) the length of  $BC$ .

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[1]

6. The diagram shows two similar triangles.



*Diagram not drawn to scale*

Calculate the lengths of the sides marked  $x$  and  $y$ .

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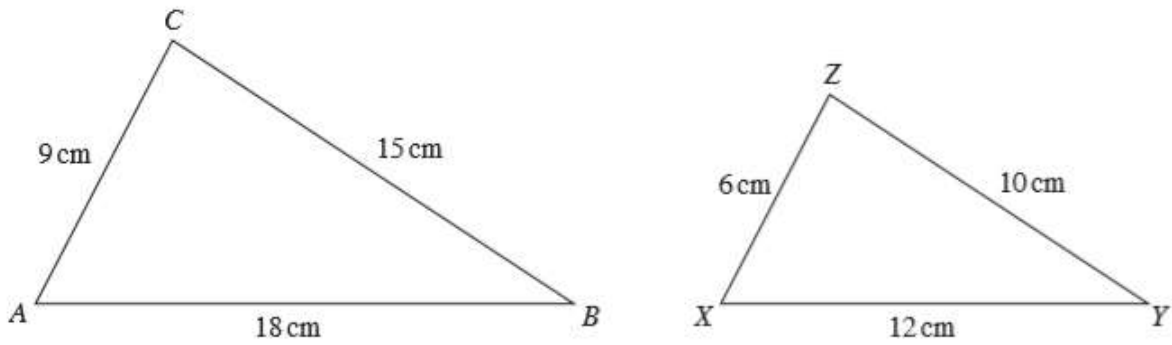
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$x = \dots\dots\dots$  cm       $y = \dots\dots\dots$  cm

[4]

7.

(a) Explain clearly why triangles  $ABC$  and  $XYZ$  are similar.



Diagrams not drawn to scale.

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[2]

(b) Triangle  $PQR$ , in which  $PQ = 15$  cm, is similar to both triangles  $ABC$  and  $XYZ$ . Calculate the length of  $QR$ .

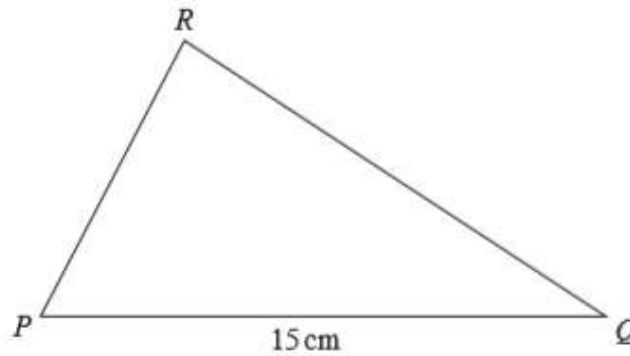


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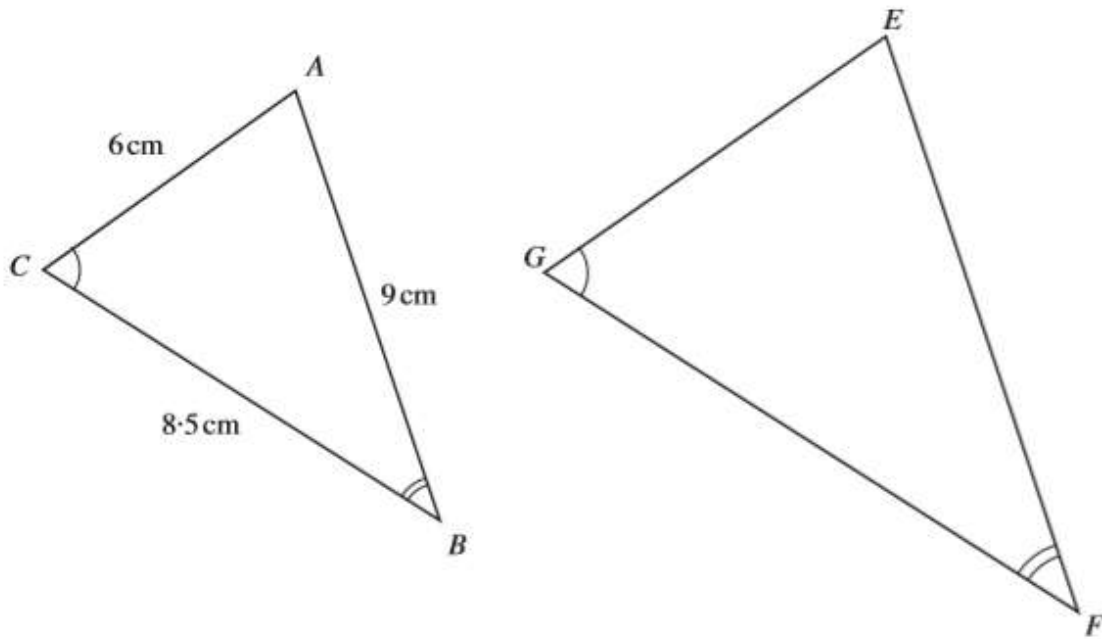
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[2]



8. Triangles  $ABC$  and  $EFG$  are similar.  
 Their corresponding sides are in the ratio 2:3.  
 Calculate the length of  $EF$ .



*Diagram not drawn to scale.*

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[2]