



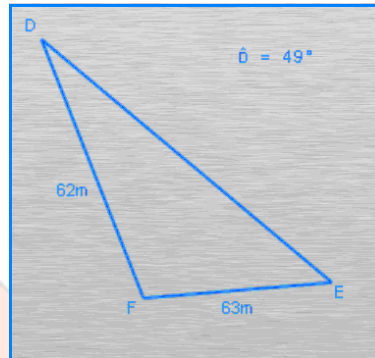
CAMI Mathematics: Grade 11

GRADE 11_Sine, cosine and area rules

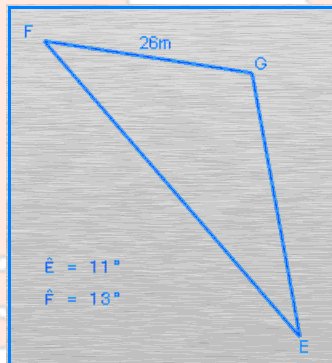
11.7 Sine Rule

1. Sine rule

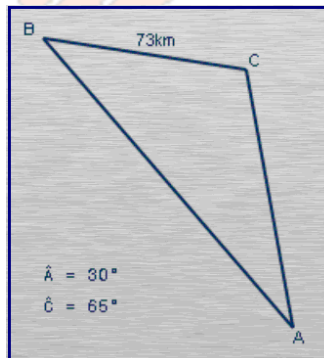
(a) Use the sine rule to calculate the size of \hat{E} .



(b) Use the sine rule to calculate the length of f.



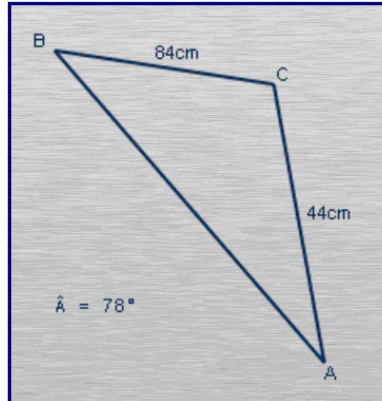
(c) Use the sine rule to calculate the length of c.



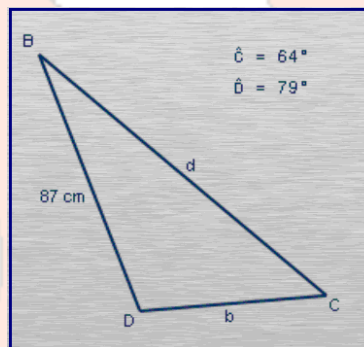


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(d) Use the sine rule to calculate the size of \hat{B} .



(e) Use the sine rule to calculate the unknown values.





MEMO

Answers correct to two decimal places.

1. Sine rule [7.7.3.1; 7.7.3.2; 7.7.3.3; 7.7.3.4]

1(a)

$$\sin E = \frac{e \times \sin D}{d}$$

$$\sin E = \frac{62 \times \sin 49^\circ}{63}$$

$$\therefore \hat{E} = 47.96^\circ$$

(b)

$$f = \frac{e \times \sin F}{\sin E}$$

$$f = \frac{26 \times \sin 13^\circ}{\sin 11^\circ}$$

$$f = 30.65m$$

(c)

$$\frac{c}{\sin C} = \frac{a}{\sin A}$$

$$c = \frac{a \times \sin C}{\sin A}$$

$$c = \frac{73 \times \sin 65^\circ}{\sin 30^\circ}$$

$$c = 132.32km$$

(d)

$$\frac{b}{\sin B} = \frac{a}{\sin A}$$

$$\sin B = \frac{b \times \sin A}{a}$$

$$\sin B = \frac{44 \times \sin 78^\circ}{84}$$

$$\therefore \hat{B} = 30.82^\circ$$



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(e)

$$\hat{B} = 180^\circ - \hat{C} - \hat{D}$$

$$\hat{B} = 37^\circ$$

$$\frac{b}{\sin B} = \frac{c}{\sin C}$$

$$b = \frac{87 \times \sin 37^\circ}{\sin 64^\circ}$$

$$b = 58.25 \text{ cm}$$

$$\frac{d}{\sin D} = \frac{c}{\sin C}$$

$$d = \frac{87 \times \sin 79^\circ}{\sin 64^\circ}$$

$$d = 95.02 \text{ cm}$$

