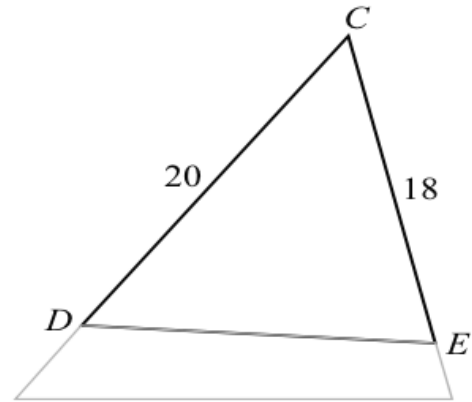
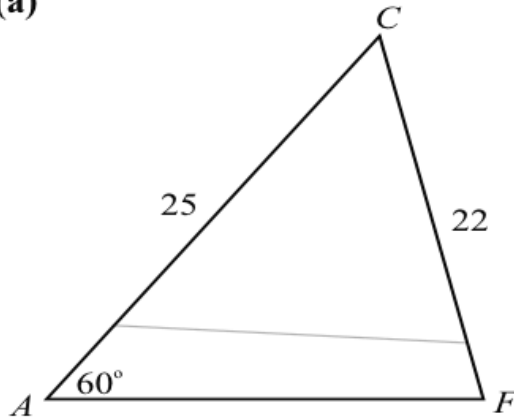


QUESTION 8 (a)



Call β the measure of $|\angle CFA|$. Use the Sine Rule to find this angle.

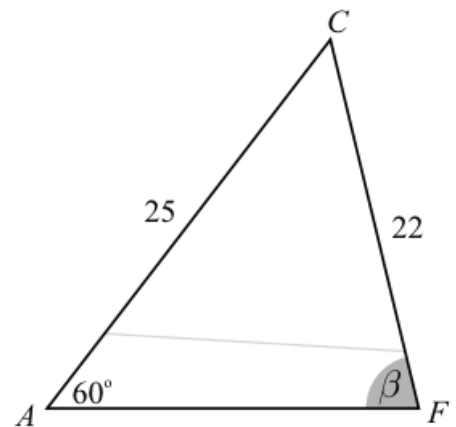
$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

[Use the Sine Rule anytime you are given 2 sides and a non-included angle.]

$$\frac{\sin \beta}{25} = \frac{\sin 60^\circ}{22}$$

$$\therefore \sin \beta = \frac{25 \sin 60^\circ}{22}$$

$$\beta = \sin^{-1}\left(\frac{25 \sin 60^\circ}{22}\right) = 79.8^\circ$$

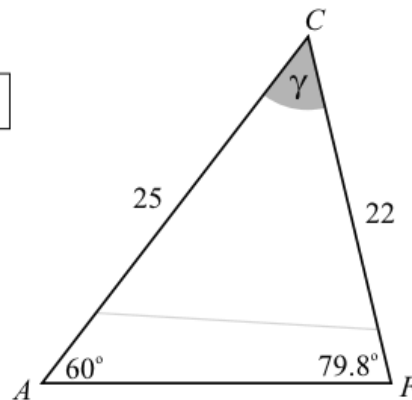


Call γ , the measure of $|\angle ACF|$.

The 3 angles of a triangle add up to 180° .

$$\gamma + 60^\circ + 79.78^\circ = 180^\circ$$

$$\gamma = 180^\circ - 60^\circ - 79.8^\circ = 40.2^\circ$$



Use the Cosine Rule to find $|DE|$.

$$a^2 = b^2 + c^2 - 2bc \cos A$$

[Use the Cosine Rule anytime you are given 2 sides and an included angle.]

$$|DE|^2 = 20^2 + 18^2 - 2(20)(18) \cos 40.2^\circ$$

$$|DE| = \sqrt{20^2 + 18^2 - 2(20)(18) \cos 40.2^\circ} = 13.2 \text{ cm}$$

