Trigonometry Worksheets
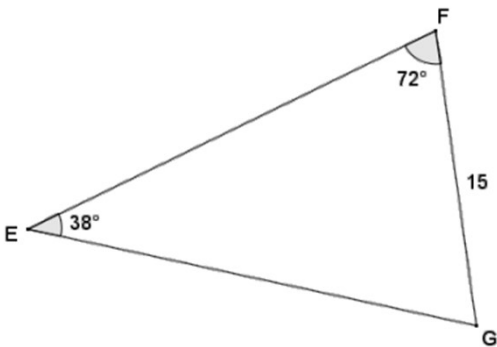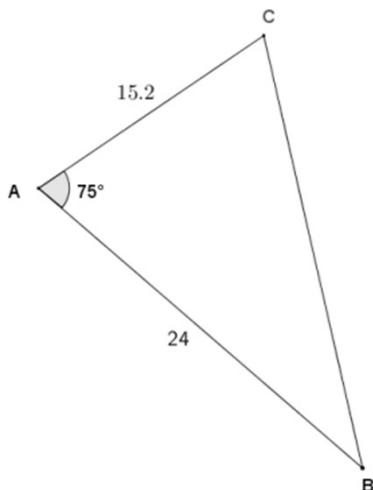## Law of Sines and Cosines

Given triangle EFG, m∠E=38°,m∠F=72°, and FG=15, find the lengths of the unknown sides to the nearest tenth.

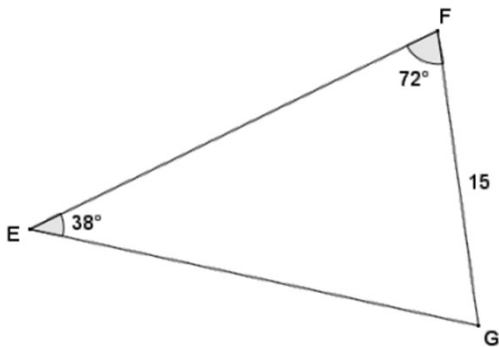Given triangle ABC, AC=18.2, AB=7, and m∠A=75°, find the length of the unknown side to the nearest tenth.

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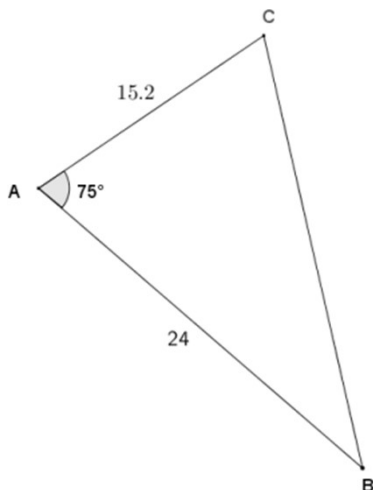*Using the angle sum of a triangle, the remaining angle G has a measure of 70°.*

$$\frac{\sin 38}{15} = \frac{\sin 72}{EG} = \frac{\sin 70}{EF}$$

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$$EG = \frac{15 \sin 72}{\sin 38} \qquad\qquad EF = \frac{15 \sin 70}{\sin 38}$$

$$EG \approx 23.2 \qquad\qquad EF \approx 22.9$$

Given triangle ABC, AC=18.2, AB=7, and m∠A=75°, find the length of the unknown side to the nearest tenth.

$$BC^2 = 24^2 + 15.2^2 - 2(24)(15.2)(\cos 75)$$

$$BC^2 = 576 + 231.04 - 729.6 \cos 75$$

$$BC^2 = 807.04 - 729.6 \cos 75$$

$$BC = \sqrt{807.04 - 729.6 \cos 75}$$

$$BC \approx 24.9$$