

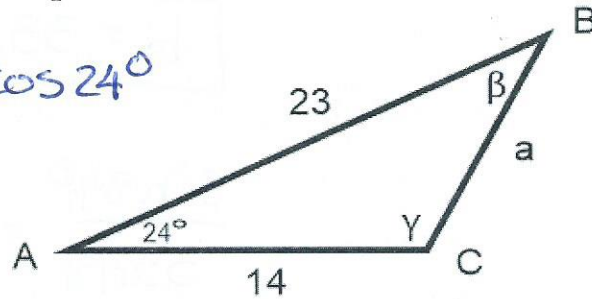
Math 112: #28 A/B/C/D

✓ A) Solve the triangle below; Assume γ is obtuse. State your answers for side length and angles to two decimal places.

$$a^2 = 14^2 + 23^2 - 2 \cdot 14 \cdot 23 \cdot \cos 24^\circ$$

$$a^2 = 136.68$$

$$a = 11.69$$



$$\frac{\sin 24^\circ}{11.69} = \frac{\sin \beta}{14}$$

$$\frac{14 \sin 24^\circ}{11.69} = \frac{\sin \beta}{11.69}$$

$$\sin^{-1}\left(\frac{14 \sin 24^\circ}{11.69}\right) = \frac{29.15^\circ}{\beta \uparrow}$$

$$\gamma = 180^\circ - 29.15^\circ - 24^\circ$$

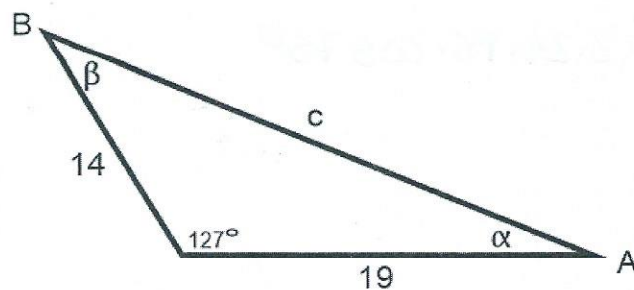
$$\gamma = 126.85^\circ$$

✓ B) Solve the triangle below; Assume γ is obtuse. State your answers for side length and angles to two decimal places.

$$c^2 = 14^2 + 19^2 - 2 \cdot 14 \cdot 19 \cdot \cos 127^\circ$$

$$c^2 = 877.1$$

$$c = 29.62$$



$$\frac{\sin 127^\circ}{29.62} = \frac{\sin \alpha}{14}$$

$$\frac{14 \sin 127^\circ}{29.62} = \frac{\sin \alpha}{29.62}$$

$$\sin^{-1}\left(\frac{14 \sin 127^\circ}{29.62}\right) = \alpha = 22.18^\circ$$

$$\gamma = 180^\circ - 127^\circ - 22.18^\circ$$

$$\gamma = 30.82^\circ$$