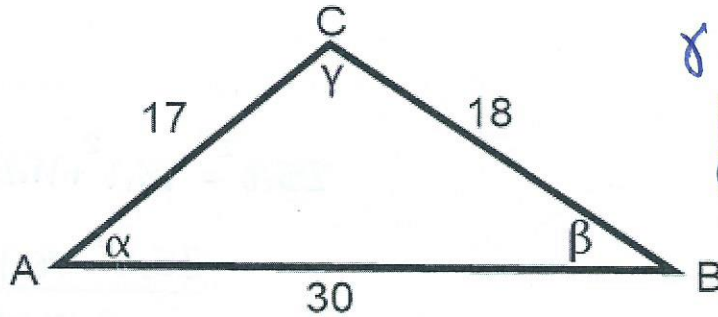


✓C) Solve the triangle below; Assume γ is obtuse. State your answers for angles to two decimal places.



$$\gamma = 180^\circ - 117.96^\circ - 32.00^\circ$$

$$\boxed{\gamma = +30.04^\circ}$$

$$30^2 = 17^2 + 18^2 - 2 \cdot 17 \cdot 18 \cdot \cos \gamma$$

$$\frac{30^2 - 17^2 - 18^2}{-2 \cdot 17 \cdot 18} = \cos \gamma$$

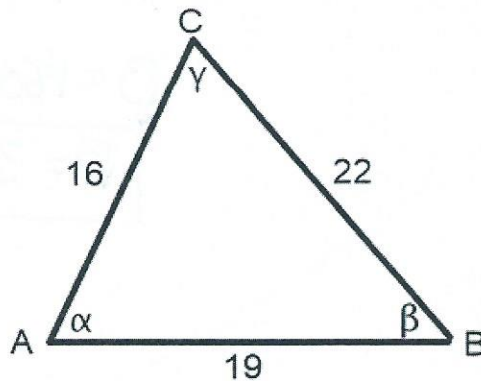
$$\cos^{-1}\left(\frac{30^2 - 17^2 - 18^2}{-2 \cdot 17 \cdot 18}\right) = \boxed{\gamma = 117.96^\circ}$$

$$\frac{\sin 117.96^\circ}{30} = \frac{\sin \alpha}{18}$$

$$\frac{18 \sin 117.96^\circ}{30} = \frac{30 \sin \alpha}{30}$$

$$\sin^{-1}\left(\frac{18 \sin 117.96^\circ}{30}\right) = \boxed{\alpha = 32.00^\circ}$$

D) Solve the triangle below. State your answers for angles to two decimal places.



$$22^2 = 16^2 + 19^2 - 2 \cdot 16 \cdot 19 \cdot \cos \alpha$$

$$\frac{22^2 - 16^2 - 19^2}{-2 \cdot 16 \cdot 19} = \cos \alpha$$

$$\cos^{-1}\left(\frac{22^2 - 16^2 - 19^2}{-2 \cdot 16 \cdot 19}\right) = \boxed{\alpha = 77.36^\circ}$$

$$\frac{\sin 77.36^\circ}{22} = \frac{\sin \beta}{16}$$

$$\frac{16 \sin 77.36^\circ}{22} = \frac{16 \sin \beta}{16}$$

$$\sin^{-1}\left(\frac{16 \sin 77.36^\circ}{22}\right) = \boxed{\beta = 45.21^\circ}$$

$$\gamma = 180^\circ - 77.36^\circ - 45.21^\circ$$

$$\boxed{\gamma = 57.43^\circ}$$