

$$\frac{\sin 45^\circ}{8} = \frac{\sin 112^\circ}{a}$$

$$\frac{\sin 45^\circ}{8} = \frac{\sin 23^\circ}{c}$$

$$\frac{a \cancel{\sin 45^\circ}}{\cancel{\sin 45^\circ}} = \frac{8 \sin 112^\circ}{\sin 45^\circ}$$

$$c \sin 45^\circ = 8 \sin 23^\circ$$

$$a = \frac{8 \sin 112^\circ}{\sin 45^\circ} = 10.49$$

exact answer

$$c = \frac{8 \sin 23^\circ}{\sin 45^\circ} = 4.42$$

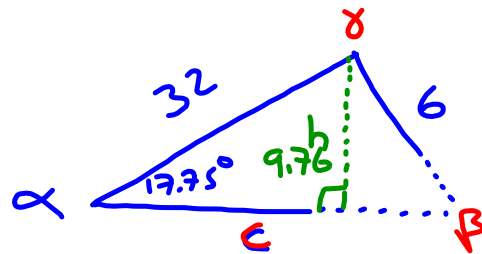
26A

$$\alpha = 17^{\circ}45' \quad a = 6 \quad b = 32 \leftarrow \text{SSA}$$

$$= 17.75^{\circ}$$

$$h = b \sin \alpha$$

$$= 32 \sin 17.75^{\circ} = 9.76$$



$a < h$ NO triangles that work.

$$\frac{\sin 17.75^{\circ}}{6} = \frac{\sin \beta}{32}$$

$$\frac{32 \sin 17.75^{\circ}}{6} = \sin \beta$$

$$\sin^{-1} \left(\frac{32 \sin 17.75^{\circ}}{6} \right) = \beta = \text{Err}$$

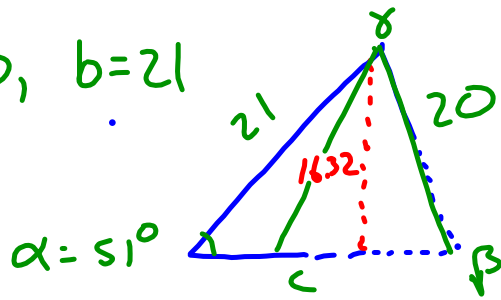
$$\frac{32 \sin 17.75^{\circ}}{6} > 1$$

not in range of $\sin x$

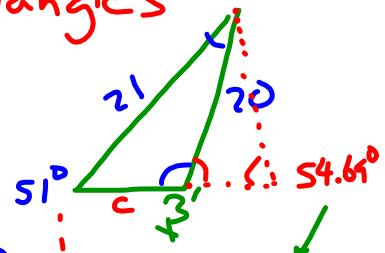
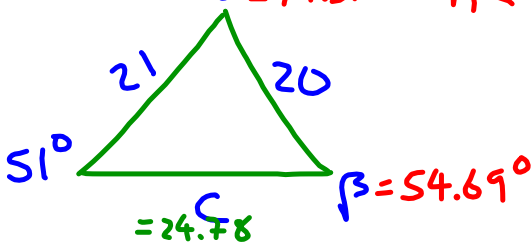
27A

$a = 51^\circ$ $a = 20$, $b = 21$

height = $21 \sin 51^\circ$
 $= 16.32$



$\gamma = 74.31^\circ$ $h < a < b$ 2 triangles



$$\frac{\sin 51^\circ}{20} = \frac{\sin \beta}{21}$$

$$\frac{\sin 51^\circ}{20} = \frac{\sin 74.31^\circ}{c}$$

$$\frac{21 \sin 51^\circ}{20} = \frac{20 \sin \beta}{20}$$

$$\frac{c \sin 51^\circ}{\sin 51^\circ} = \frac{20 \sin 74.31^\circ}{\sin 51^\circ}$$

$$c = 24.78$$

$$\sin^{-1}\left(\frac{21 \sin 51^\circ}{20}\right) = \beta = 54.69^\circ$$

$$\gamma = 180^\circ - 54.69^\circ - 51^\circ$$

$$\gamma = 74.31^\circ$$

$$\frac{\sin 51^\circ}{20} = \frac{\sin 3.69^\circ}{c}$$

$$\frac{c \sin 51^\circ}{\sin 51^\circ} = \frac{20 \sin 3.69^\circ}{\sin 51^\circ}$$

$$c = 1.66$$