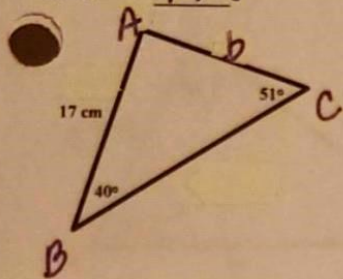


The Law of Sines Practice

Use the Law of Sines to find each side length. Show all work! Round your answers to the tenth.

1. $b \approx \underline{14.1}$



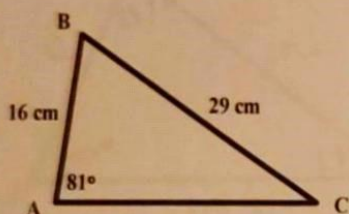
$$\frac{\sin 40}{b} = \frac{\sin 51}{17}$$

$$b \sin 51 = 17 \sin 40$$

$$b = \frac{17 \sin 40}{\sin 51}$$

Use the Law of Sines to find each missing angle measure. Show all work! Round your answers nearest tenth.

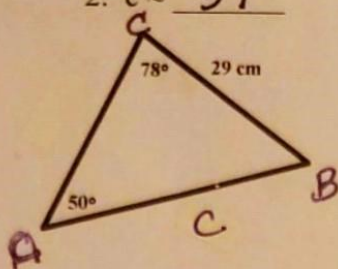
4. $m\angle C \approx \underline{33.0^\circ}$



$$\frac{\sin 81}{29} = \frac{\sin C}{16}$$

$$C = \sin^{-1}\left(\frac{16 \sin 81}{29}\right)$$

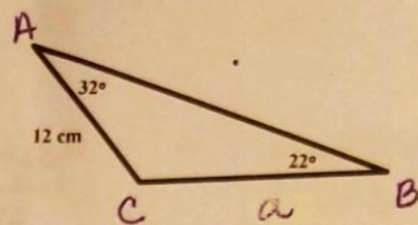
2. $c \approx \underline{37}$



$$\frac{\sin 78}{c} = \frac{\sin 50}{29}$$

$$c = \frac{29 \sin 78}{\sin 50}$$

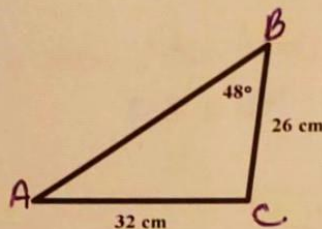
3. $a \approx \underline{16.97} = \underline{17}$



$$\frac{\sin 32}{a} = \frac{\sin 22}{12}$$

$$a = \frac{12 \sin 32}{\sin 22}$$

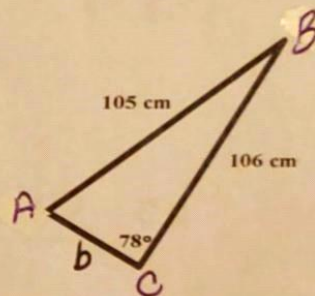
5. $m\angle A \approx \underline{37.1^\circ}$



$$\frac{\sin 48}{32} = \frac{\sin A}{26}$$

$$A = \sin^{-1}\left(\frac{26 \sin 48}{32}\right)$$

6. $m\angle A \approx \underline{80.9^\circ}$



$$\frac{\sin 78}{105} = \frac{\sin A}{106}$$

$$A = \sin^{-1}\left(\frac{106 \sin 78}{105}\right)$$

Use the Law of Sines to solve each triangle. Sketch the triangle and show all work! Round your answers to the nearest tenth of a unit.

7) $\triangle ABC$

$m\angle A = \underline{27^\circ}$

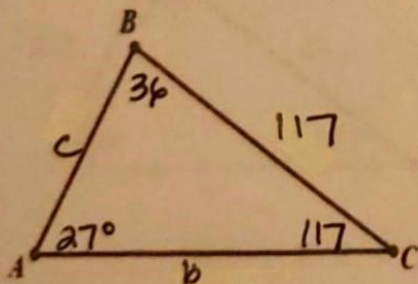
$a = 117$

$m\angle B = 36^\circ$

$b = \underline{151.5}$

$m\angle C = 117^\circ$

$c = \underline{229.6}$



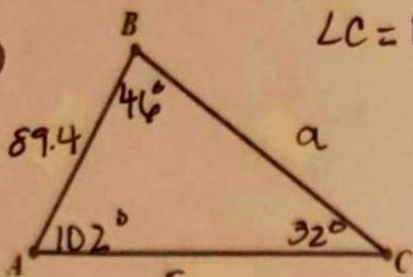
$$m\angle A = 180 - (117 + 36) = 27^\circ$$

$$\frac{\sin 27}{117} = \frac{\sin B}{b} = \frac{\sin 117}{c}$$

$$b = \frac{117 \sin 36}{\sin 27} = 151.5$$

$$c = \frac{117 \sin 117}{\sin 27} = 229.6$$

2. $\triangle ABC$



$$\angle C = 180 - (102 + 46)$$

$$\angle C = 32^\circ$$

$$\frac{\sin 32}{89.4} = \frac{\sin 46}{b} = \frac{\sin 102}{a}$$

b

$$m\angle A = 102^\circ \quad a = 165$$

$$m\angle B = 46^\circ \quad b = 121.4$$

$$m\angle C = 32^\circ \quad c = 89.4$$

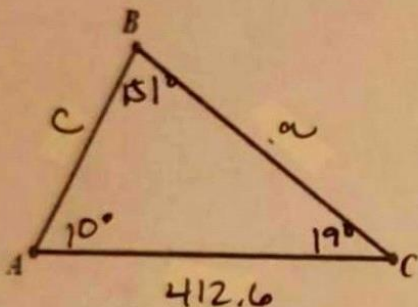
$$b = \frac{89.4 \sin 46}{\sin 32}$$

$$b = 121.4$$

$$a = \frac{89.4 \sin 102}{\sin 32}$$

$$a = 165$$

3. $\triangle ABC$



$$\angle A = 180 - (151 + 19)$$

$$\angle A = 10^\circ$$

$$\frac{\sin 151}{412.6} = \frac{\sin 10}{a} = \frac{\sin 19}{c}$$

$$m\angle A = 10^\circ \quad a = 147.8$$

$$m\angle B = 151^\circ \quad b = 412.6$$

$$m\angle C = 19^\circ \quad c = 277.1$$

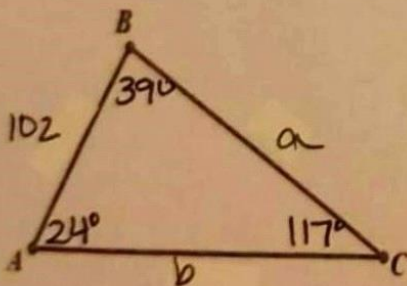
$$a = \frac{412.6 \sin 10}{\sin 151}$$

$$a = 147.8$$

$$c = \frac{412.6 \sin 19}{\sin 151}$$

$$c = 277.1$$

4. $\triangle ABC$



$$\angle C = 180 - (24 + 39) = 117^\circ$$

$$\frac{\sin 117}{102} = \frac{\sin 24}{a} = \frac{\sin 39}{b}$$

$$a = \frac{102 \sin 24}{\sin 117}$$

$$a = 46.6$$

$$b = \frac{102 \sin 39}{\sin 117}$$

$$b = 72.0$$

$$m\angle A = 24^\circ \quad a = 46.6$$

$$m\angle B = 39^\circ \quad b = 72$$

$$m\angle C = 117^\circ \quad c = 102$$