Solve each triangle. Round your answers to the nearest tenth.

1) $m\angle B = 111°,\ a = 23$ ft, $c = 29$ ft

$A = 30°$
$B = 111°$
$C = 39°$

$a = 23$ ft.
$b = 43.0$ ft
$c = 29$ ft.

$b^2 = a^2 + c^2 - 2ac(\cos B)$

$b^2 = 23^2 + 29^2 - (2(23)(29)(\cos 111°))$

$b^2 = \sqrt{1848.06}$

$b = 42.98$

$b = 43.0$

$\cos A = \dfrac{b^2 + c^2 - a^2}{2bc}$

$\cos A = \dfrac{(43^2 + 29^2 - 23^2)}{(2(43)(29))}$

$\cos A = 0.8665$

$A = 29.9$

$A = 30°$

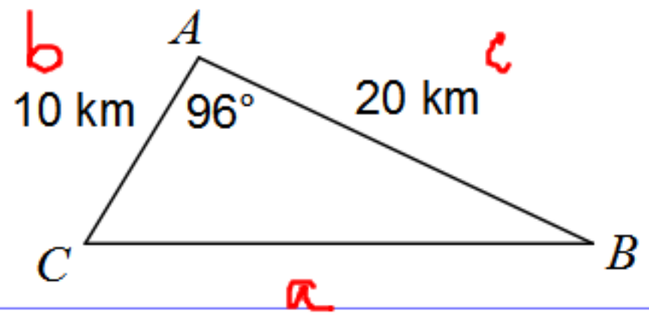
$\angle C = 180 - (30 + 111)$

$\angle C = 180 - 141$

$\angle C = 39°$

Find each measurement indicated. Round your answers to the nearest tenth.

2) Find BC



$a^2 = b^2 + c^2 - 2bc(\cos A)$

$a^2 = 10^2 + 20^2 - (2(10)(20)(\cos 96°))$

$a^2 = \sqrt{541.8}$

$a = 23.3$

$BC = 23.3$ km

Find the measure of each angle indicated. Round to the nearest tenth.

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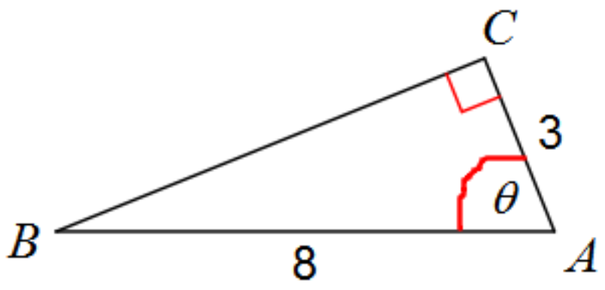
3)



$\cos A = \frac{A}{H}$

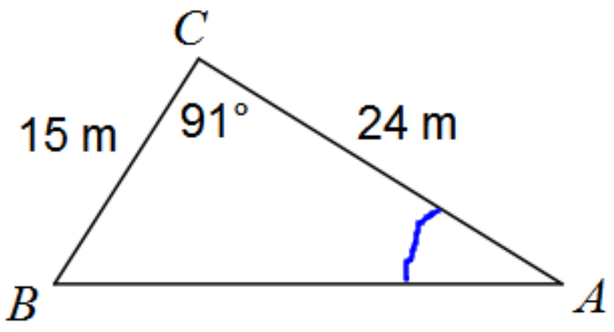
$\cos A = \frac{3}{8}$

$\cos A = 0.3750$

$A = 68^\circ$

Find each measurement indicated. Round your answers to the nearest tenth.

4) Find $m\angle A$



$c^2 = a^2 + b^2 - 2ab(\cos 91)$

$c^2 = 15^2 + 24^2 - 2(15)(24)(\cos 91)$

$c^2 = \sqrt{813.57}$

$c = 28.5$

$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$

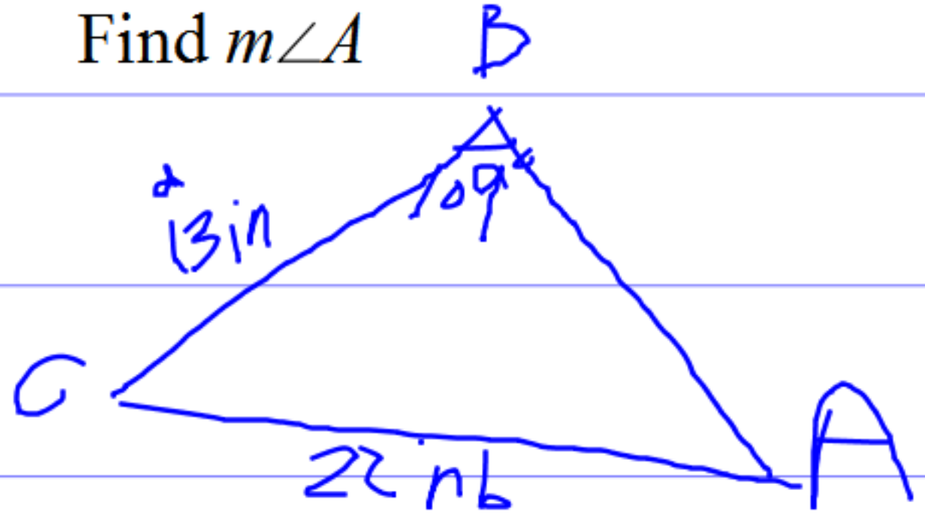
$\cos A = \frac{24^2 + 28.5^2 - 15^2}{2(24)(28.5)}$

$\cos A = 0.8503$

$A = 31.8°$

Find each measurement indicated. Round your answers to the nearest tenth.

5) $m\angle B = 109°$, $a = 13$ in, $b = 22$ in
Find $m\angle A$



$$b^2 = a^2 + c^2 - 2(a)(c)(\cos B)$$

$$22^2 = 13^2 + c^2 - 2(13)(c)(\cos 109°)$$

$$484 = 169 + c^2 - 2(c)(-0.3256)$$

Find each measurement indicated. Round your answers to the nearest tenth.

5) $m\angle B = 109°$, $a = 13$ in, $b = 22$ in
Find $m\angle A$

$$\frac{\sin B}{b} = \frac{\sin A}{a}$$

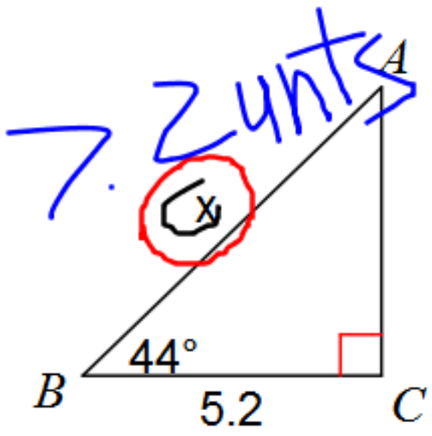
$$\frac{\sin 109}{22} = \frac{\sin A}{13}$$

$$\frac{13 \sin 109}{22} = \frac{22 \sin A}{22} \qquad A = 34°$$

$$\sin A = 0.5587$$

Find the measure of each side indicated. Round to the nearest tenth.

6)



7.2 units

$\cos 44^\circ = \frac{a}{h}$

$\cos 44^\circ = \frac{5.2}{c}$

$c \cos 44^\circ = 5.2$

$\frac{c \cos 44^\circ}{\cos 44^\circ} = \frac{5.2}{\cos 44^\circ}$

$c = 7.2$ units

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