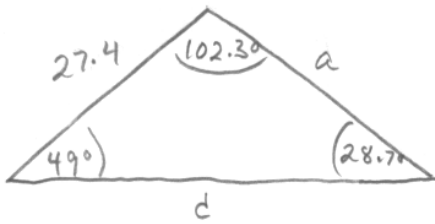


SHOW YOUR WORK FOR FULL CREDIT.

1. Find the longest side of the triangle with $C = 102.3^\circ$, $A = 49^\circ$, and $b = 27.4$ feet.



$$\frac{c}{\sin 102.3^\circ} = \frac{27.4}{\sin 28.7^\circ}$$

$$c = 55.7 \text{ feet}$$

2. Find two triangles for which $a = 12$ meters, $b = 31$ meters, and $A = 20.5^\circ$.

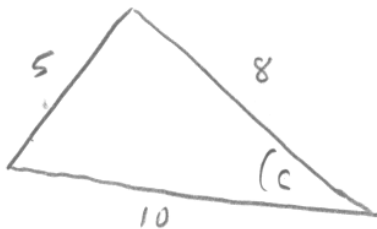
$$\frac{\sin B}{31} = \frac{\sin 20.5^\circ}{12}$$

$$\sin B = .9047$$

$$B = 64.8^\circ \text{ or } 115.2^\circ$$

}	$A = 20.5^\circ$ $B = 64.8^\circ$ $C = 94.7^\circ$	}	$A = 20.5^\circ$ $B = 115.2^\circ$ $C = 44.3^\circ$
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3. Find the smallest angle included in the triangle with sides 5, 8, and 10.



$$5^2 = 8^2 + 10^2 - 2(8)(10)\cos C$$

$$\cos C = \frac{8^2 + 10^2 - 5^2}{2(8)(10)}$$

$$C = 29.7^\circ$$

4. The pitcher's mound on a women's softball field is 43 feet from home plate and the distance between the bases is 60 feet, as shown in the figure. How far is the pitcher's mound from first base? (Note: The pitcher's mound is not halfway between home plate and second base.)

$$h^2 = 43^2 + 60^2 - 2(43)(60)\cos 45^\circ$$

$$h = 43.4 \text{ feet}$$

