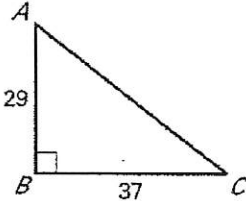


Geometry Worksheet

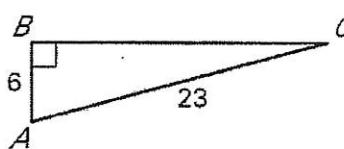
7.7 Solving Right Triangles

Name Key

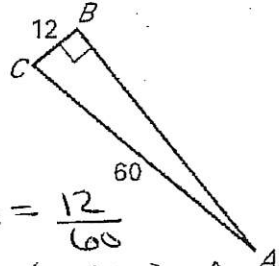
Approximate the measure of $\angle A$ to the nearest degree.

1. 

$\tan A = \frac{37}{29}$
 2nd $\tan (37/29) = A$
 51.9112
 $\angle A \approx 52^\circ$

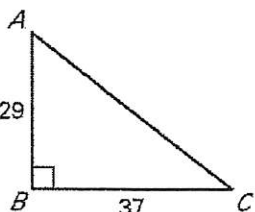
2. 

$\cos A = \frac{6}{23}$
 2nd $\cos (6/23) = A$
 74.8783 = A
 $\angle A \approx 75^\circ$

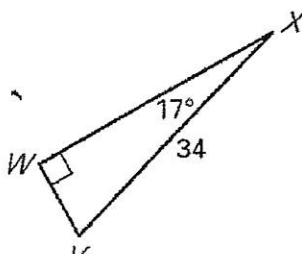
3. 

$\sin A = \frac{12}{60}$
 2nd $\sin (12/60) = A$
 11.5369 = A
 $\angle A \approx 12^\circ$

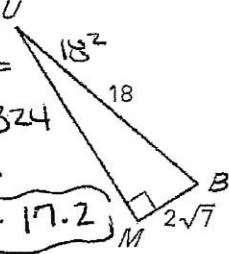
Solve the right triangle. Round decimal answers to the nearest tenth.

4. 

look at # 1.
 $\angle A = 52^\circ$
 $\angle C = 38^\circ$
 $29^2 + 37^2 = AC^2$
 $841 + 1369 = AC^2$
 $2210 = AC^2$
 $AC = 47.0106$
 $AC = 47.0$

5. 

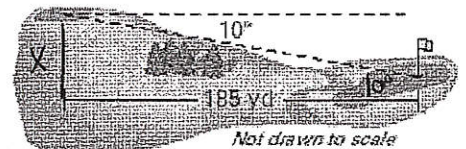
$\angle V = 73^\circ$
 $\cos 17^\circ = \frac{WX}{34}$
 $34 (\cos 17) = WX$
 $32.5143 = WX$
 $WX = 32.5$
 $\sin 17 = \frac{WV}{34}$
 $34 \sin 17 = WV$
 $9.9406 = WV$
 $WV = 9.9$

6. 

$UM^2 + (2\sqrt{7})^2 = 18^2$
 $UM^2 + 28 = 324$
 $UM^2 = 296$
 $UM = 2\sqrt{74} \approx 17.2$
 $\sin U = \frac{2\sqrt{7}}{18}$
 2nd $\sin (2\sqrt{7}/18) = U$
 17.0959 = U
 $\angle U = 17^\circ$
 $\cos \angle B = \frac{2\sqrt{7}}{18}$
 2nd $\cos (2\sqrt{7}/18) = B$
 72.9040 = B
 $\angle B \approx 73^\circ$

7. The angle of depression from the tee box to the green is 10° on a par 3, 185 yard hole. How much higher is the tee box than the green? Round to the nearest yard.

$\tan 10^\circ = \frac{x}{185}$
 $185 \tan 10^\circ = x$
 $32.6204 = x$
 $33 \text{ yds.} = x$



The tee box is 33 yards higher than the green.

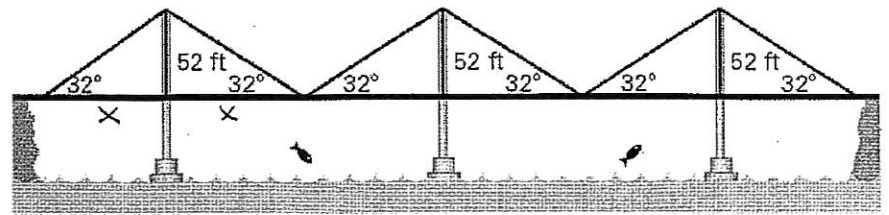
8. Find the distance across the suspension bridge. (rounded to the nearest 10th)

$$\tan 32^\circ = \frac{52}{x}$$

$$x = \frac{52}{\tan 32^\circ}$$

$$x = 83.2174$$

$$x = 83.2$$



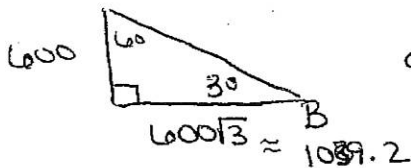
$$\begin{aligned} \text{Bridge length} &= 6x \\ &= 6(83.2) \end{aligned}$$

$$\text{Bridge length} = 499.2 \text{ ft}$$

9. You are in a hot air balloon that is 600 feet above the ground where you can see 2 people.

A) If the angle of depression from your line of sight to the person at B is 30°, how far is the person from the point on the ground below the hot air balloon?

(exact and rounded to the nearest 10th)



OR

$$\tan 30^\circ = \frac{600}{x}$$

$$x = \frac{600}{\tan 30^\circ}$$

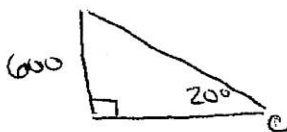
$$x = 1039.2$$

$$1039.2 \text{ ft}$$

$$\text{exact } 600\sqrt{3} \text{ ft}$$

B) If the angle of depression from your line of sight to the person at C is 20°, how far is the person from the point on the ground below the hot air balloon?

(Rounded to the nearest 10th)



$$\tan 20^\circ = \frac{600}{y}$$

$$y = \frac{600}{\tan 20^\circ}$$

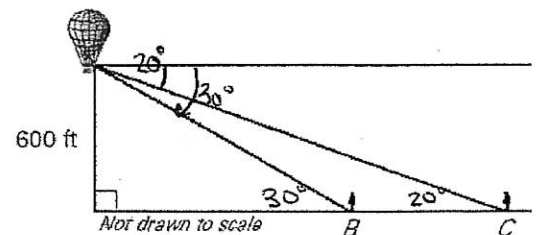
$$y \approx 1648.486 \quad y \approx 1,648.5 \text{ ft}$$

$$1,648.5 \text{ ft}$$

C) How far apart are the two people?

$$1,648.5 - 1039.2 = 609.3$$

$$609.3 \text{ ft apart}$$



Not drawn to scale