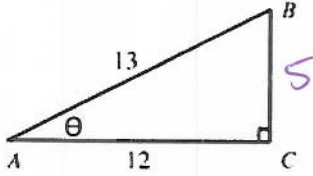


Key

Algebra 2 REVIEW 13.1-13.2

1. Evaluate the six trigonometric functions of θ .



$$12^2 + a^2 = 13^2$$
$$a = 5$$

$$\sin \theta = \frac{5}{13}$$

$$\csc \theta = \frac{13}{5}$$

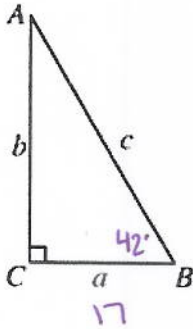
$$\cos \theta = \frac{12}{13}$$

$$\sec \theta = \frac{13}{12}$$

$$\tan \theta = \frac{5}{12}$$

$$\cot \theta = \frac{12}{5}$$

2. Solve $\triangle ABC$ using the diagram and the given measurements. (The triangle is not drawn to scale.)
 $B = 42^\circ$, $a = 17$

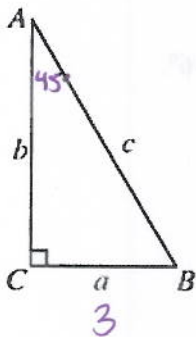


$$\angle A = 48^\circ$$

$$b = 15.31$$

$$c = 22.88$$

3. Solve $\triangle ABC$ using the diagram and the given measurements. (The triangle is not drawn to scale.)
 $A = 45^\circ$, $a = 3$

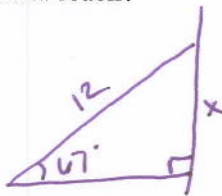


$$\angle B = 45^\circ$$

$$b = 3.00$$

$$c = 4.24$$

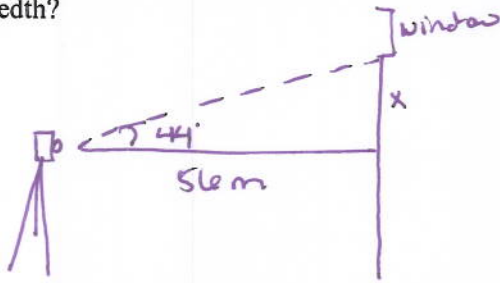
4. A ladder 12 feet long makes an angle of 67° with the ground as it leans against a store. How far up the side of the store does the ladder reach?



$$\sin 67 = \frac{x}{12}$$

$$x = 11.05 \text{ ft.}$$

5. A photographer points a camera at a window in a nearby building forming an angle of 44° with the camera platform. If the camera is 56 m from the building, how high above the platform is the window, to the nearest hundredth?



$$\tan 44 = \frac{x}{56}$$

$$x \approx 54.08 \text{ m}$$

Find one positive angle and one negative angle that are coterminal with the given angle.

6. 111° $\frac{+360}{471^\circ} =$ $\frac{-360}{-249^\circ} =$

7. $-\frac{5\pi}{6}$ $\frac{+2\pi}{\frac{7\pi}{6}} =$ $\frac{-2\pi}{-\frac{17\pi}{6}} =$

8. Convert 48° to radian measure.

$$\frac{R}{48} = \frac{\pi}{180} \qquad \frac{4\pi}{15}$$

9. Convert $\frac{7\pi}{15}$ to degree measure.

$$\frac{\frac{7\pi}{15}}{D} = \frac{\pi}{180} \qquad 84^\circ$$

10. Find the arc length and area of a sector with a radius of 7 feet and a central angle of $36^\circ = \frac{\pi}{5}$

$$S = r\theta \qquad A = \frac{1}{2}r^2\theta$$

$$S = 7\left(\frac{\pi}{5}\right) = \frac{7\pi}{5} \approx 4.40 \text{ ft.} \qquad A = \frac{1}{2}(7^2)\left(\frac{\pi}{5}\right) = \frac{49\pi}{5} \approx 15.39 \text{ ft}^2$$

11. Find the arc length and area of a sector with a central angle of $\pi/3$ and a radius of 3.

$$S = r\theta \qquad A = \frac{1}{2}r^2\theta$$

$$S = \left(\frac{\pi}{3}\right) \cdot 3 \qquad A = \frac{1}{2}(3^2)\left(\frac{\pi}{3}\right)$$

$$S = \pi \qquad A = \frac{3\pi}{2}$$