

Pre-Calculus

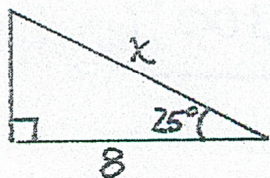
Trig WS practice #1

NAME _____

DATE _____

A# _____

1. Find x .



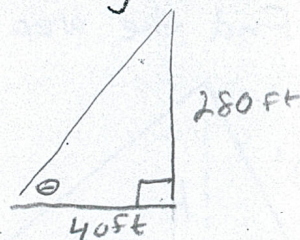
$$\cos 25^\circ = \frac{8}{x}$$

$$x \cos 25^\circ = 8$$

$$x = \frac{8}{\cos 25^\circ}$$

$$\boxed{x = 8.827}$$

2. As I stand 40 ft from a base of a building which is 280 ft tall, what is the angle of elevation of the tilt of my head?

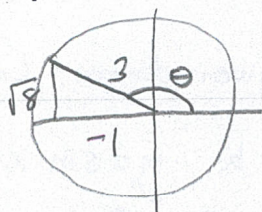


$$\tan \theta = \frac{280}{40}$$

$$\theta = \tan^{-1}(7)$$

$$\boxed{\theta = 81.9^\circ}$$

3. Sketch $\cos \theta = -\frac{1}{3}$ where $90^\circ \leq \theta \leq 180^\circ$ and find $\sin \theta$, $\tan \theta$, and θ .



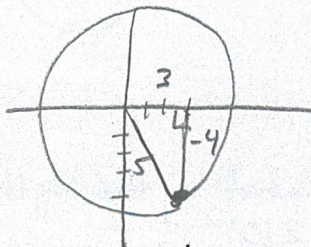
$$\sin \theta = \frac{2\sqrt{2}}{3}$$

$$\tan \theta = -2\sqrt{2}$$

$$\theta_{\text{ref}} = 70.5$$

$$\boxed{\theta = 109.5^\circ}$$

4. The terminal side of an angle passes through the point $(3, -4)$. Sketch this angle and find $\sin \theta$, $\sec \theta$, and θ .



$$\sin \theta = -\frac{4}{5}$$

$$\sec \theta = \frac{5}{3}$$

$$\boxed{\theta = -53.1^\circ \text{ or } 306.9^\circ}$$

5. Know your table! Find the exact value of each.

a. $\sin 60^\circ = \boxed{\frac{\sqrt{3}}{2}}$

b. $\cos 330^\circ = \boxed{\frac{\sqrt{3}}{2}}$

c. $2 \sin \frac{\pi}{6} \cdot \cos \frac{\pi}{6}$
 $2 \left(\frac{1}{2} \right) \left(\frac{\sqrt{3}}{2} \right) = \boxed{\frac{\sqrt{3}}{2}}$

6. Find θ such that $\theta = \sin^{-1}(0.3191)$ and $0 \leq \theta \leq 360^\circ$

$$\boxed{\theta = 18.6^\circ \text{ and } 161.4^\circ}$$

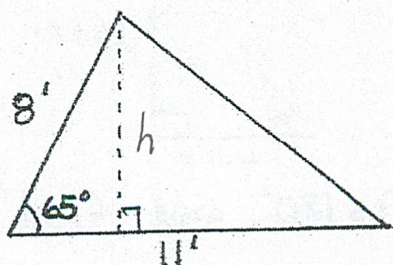
7. Solve $4 + 2\cos\theta = 5$ over $0 \leq \theta \leq 360^\circ$

$$2\cos\theta = 1$$

$$\cos\theta = \frac{1}{2}$$

$$\theta = 60^\circ, 300^\circ$$

8. Find the area of this triangle. It is NOT a right triangle.



$$\sin 65^\circ = \frac{h}{8}$$

$$h = 7.25'$$

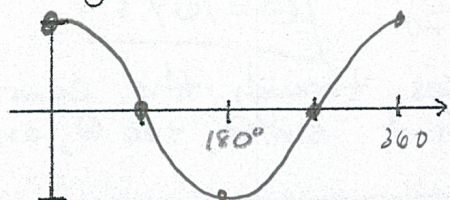
$$A = \frac{1}{2} b \cdot h$$

$$A = \frac{1}{2} (11)(7.25)$$

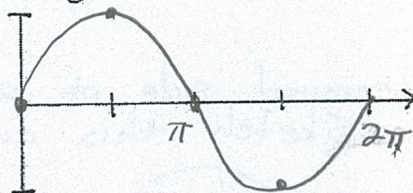
$$A = 39.875 \text{ ft}^2$$

9. Sketch each graph over the given domain. Label the graph correctly.

a. $y = \cos\theta$, $0 \leq \theta \leq 360^\circ$



b. $y = \sin x$, $0 \leq x \leq 2\pi$



Bonus: #1 - Multiple Choice - Show why

If a circle has a radius of 6cm, then what is the length of the arc intercepted by a central angle of 210° ?

a. $7\pi/6$

b. $7\pi/2$

c. 7π

d. $\frac{15\pi}{2}$

e. 8π

$$s = \theta r \quad s = \frac{7\pi}{6} \cdot 6 = 7\pi$$

#2] In $\triangle ABC$,

$$\frac{\cos A \cdot \cot B}{\csc A} =$$

a. $\frac{a^2 \cdot b}{c^3}$

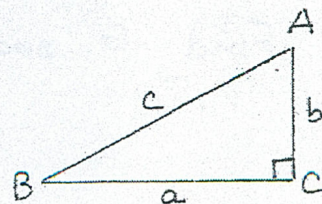
b. $\frac{b^2}{c^2}$

c. 1

d. $\frac{a^2}{c^2}$

e. $\frac{a^3}{b \cdot c^2}$

$$\frac{\frac{b}{c} \cdot \frac{a}{b}}{\frac{c}{a}} = \frac{b}{c} \cdot \frac{a}{b} \cdot \frac{a}{c} = \frac{a^2}{c^2}$$



* and do p 299 WE #13-21 odd on another sheet