

Precalculus Unit 5: Unit 5 Review

Trigonometry

- Convert to radians: 250°
- Find the radian measure of the central angle of a circle with a radius of 75 inches that intercepts an arc of 25 inches.
- Find the measure of the intercepted arc for a 50° angle on a circle of radius 2 feet.
- Use your unit circle to find the exact value of each of the following:

a. $\sin\left(\frac{3\pi}{4}\right)$

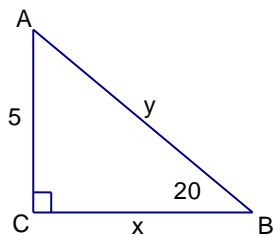
b. $\tan \frac{23\pi}{6}$

c. $\sec\left(\frac{13\pi}{4}\right)$

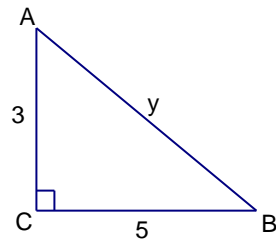
d. $\cos\left(\frac{-5\pi}{6}\right)$

- If the point $(-5, -12)$ is on the terminal side of θ , determine the exact values of the six trig functions of θ . (Hint: Draw an appropriate triangle)
- Solve each of the following right triangles (CHECK THE MODE OF YOUR CALCULATOR!):

a.

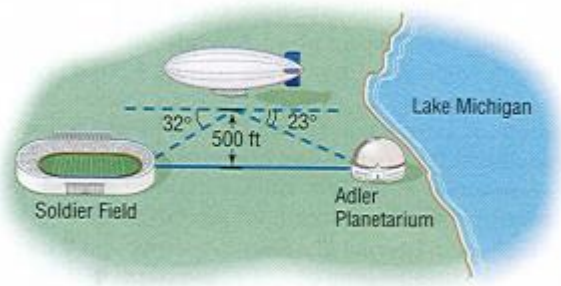


b.

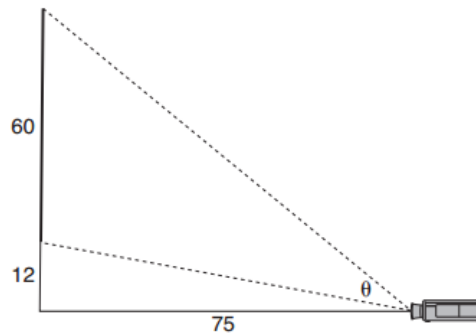


- A 40 foot extension ladder leans against the side of a building. Find the distance, h , up the side of the building if the angle of elevation of the ladder is 68° . (5 points)

8. A ramp leading to a freeway overpass is 470 feet long and rises 32 feet. What is the average angle of inclination of the ramp to the nearest tenth of a degree? (5 points)
9. A blimp suspended in the air at a height of 500 feet, lies directly over a line from Soldier Field to the Adler Planetarium on Lake Michigan (see the figure). If the angle of depression from the blimp to the stadium is 32° and from the blimp to the planetarium is 23° , find the distance between Soldier Field and the Adler Planetarium.



10. As modeled below, a movie is projected onto a large outdoor screen. The bottom of the 60-foot tall screen is 12 feet off the ground. The projector sits on the ground at a horizontal distance of 75 feet from the screen.



Determine to the nearest tenth of a degree, the measure of θ , the projection angle.