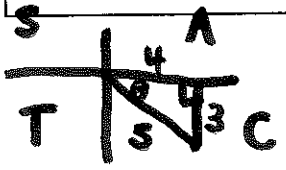


9.3-9.4 Quiz Review
Algebra 2 with Trigonometry

NON-CALCULATOR SECTION

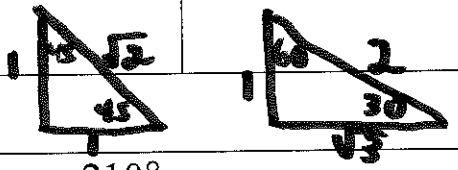


Let $(4, -3)$ be a point on the terminal side of an angle θ in standard position. Evaluate the six trigonometric functions of θ .

| | | | |
|----|--|---|--|
| 1. | $\sin \theta = \underline{-\frac{3}{5}}$ | $\cos \theta = \underline{\frac{4}{5}}$ | $\tan \theta = \underline{-\frac{3}{4}}$ |
| | $\csc \theta = \underline{-\frac{5}{3}}$ | $\sec \theta = \underline{\frac{5}{4}}$ | $\cot \theta = \underline{-\frac{4}{3}}$ |

Let $(-5, 8)$ be a point on the terminal side of an angle θ in standard position. Evaluate the six trigonometric functions of θ .

| | | | |
|----|-------------------------------------|--|-----------------------------|
| 2. | $\sin \theta = \frac{8}{\sqrt{89}}$ | $\cos \theta = \frac{-5\sqrt{89}}{89}$ | $\tan \theta = \frac{8}{5}$ |
| | $\csc \theta = \frac{\sqrt{89}}{8}$ | $\sec \theta = \frac{\sqrt{89}}{5}$ | $\cot \theta = \frac{5}{8}$ |



Evaluate the function without using a calculator.

| | | | |
|----------------------------|--|--------------------------------------|----------------------|
| 3. $\cos \frac{7\pi}{4}$ | $\cos 315^\circ = \frac{1}{\sqrt{2}}$ | $\cos 45^\circ = \frac{1}{\sqrt{2}}$ | $\frac{\sqrt{2}}{2}$ |
| 4. $\sec 210^\circ$ | $\sec 30^\circ = \frac{2\sqrt{3}}{\sqrt{3}\sqrt{3}}$ | $-\frac{2\sqrt{3}}{3}$ | |
| 5. $\cot(-\frac{8\pi}{3})$ | $\cot(-480^\circ) = \frac{1}{\sqrt{3}}$ | $\cot 60^\circ = \frac{1}{\sqrt{3}}$ | $\frac{\sqrt{3}}{3}$ |
| 6. $\sin(-135^\circ)$ | $\sin 45^\circ = \frac{1}{\sqrt{2}}$ | $-\frac{\sqrt{2}}{2}$ | |

*

Find the reference angle θ for the given angle.

7. $\theta = \frac{23\pi}{36}$ ~~$\frac{13\pi}{36}$~~ ~~$\frac{23\pi}{36}$~~ $\theta = 115^\circ$

$\frac{13\pi}{36}$

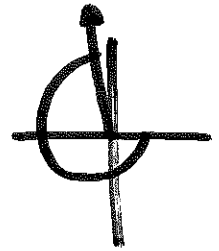
(radians)

$65 \cdot \frac{\pi}{180}$

8. $\theta = -265^\circ$

85°

(degrees)



9. $\theta = \frac{15\pi}{4}$ ~~$\frac{15\pi}{4}$~~ ~~$\frac{15\pi}{4}$~~ $\theta = 675^\circ$

$\frac{\pi}{4}$

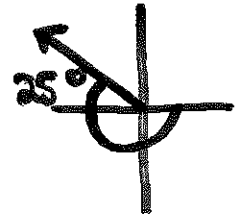
(radians)



10. $\theta = -205^\circ$

25°

(degrees)



Evaluate in both radians and degrees.

11. $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)$



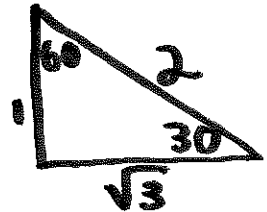
$\frac{\pi}{4}$

(radians)

45°

(degrees)

12. $\cos^{-1}\left(\frac{1}{2}\right)$



$\frac{\pi}{3}$

(radians)

60°

(degrees)

$60^\circ \cdot \frac{\pi}{180}$

13. $\sec^{-1}\left(\frac{2\sqrt{3}}{3}\right)$

$30 \cdot \frac{\pi}{180}$

$\frac{\pi}{6}$

(radians)

30°

(degrees)

14. $\csc^{-1}(\sqrt{2})$

$\frac{\pi}{4}$

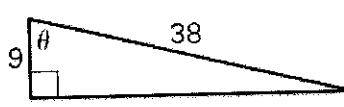
(radians)

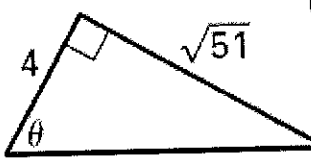
45°

(degrees)

CALCULATOR SECTION

Solve for θ . Round to the nearest tenth of a degree.

15.  $\cos \theta = \frac{9}{38}$
 $\cos^{-1}\left(\frac{9}{38}\right) = \theta$
 $\theta = 76.3^\circ$

16.  $\theta = \tan^{-1}\left(\frac{\sqrt{51}}{4}\right)$
 $\theta = 60.7^\circ$

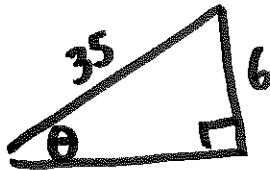
17. $\cos \theta = -0.65; 180^\circ < \theta < 270^\circ$
 $\theta = \cos^{-1}(-.65) = 130.5$
 $\theta = 229.5^\circ$

18. $\tan \theta = 0.42; 180^\circ < \theta < 270^\circ$
 $\theta = \tan^{-1}(.42) = 22.8$
 $\theta = 202.8^\circ$

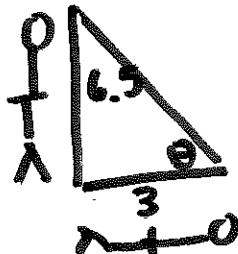
19. $\tan \theta = -2.5; 270^\circ < \theta < 360^\circ$
 $\theta = \tan^{-1}(-2.5) = -68.2$
 $\theta = 291.8^\circ$

Solve for the indicated angle. Round to the nearest tenth of a degree.

20. A builder needs to construct a wheelchair ramp 35 feet long that rises to a height of 6 feet above ground level. Approximate the angle that the ramp should make with the ground.


 $\sin^{-1}\left(\frac{6}{35}\right) = \theta$
 $\theta = 9.9^\circ$

21. At a certain time of day, a basketball player that is six feet and six inches tall casts a three foot long shadow. Approximate the angle the sun's rays make with the ground.


 $\theta = \tan^{-1}\left(\frac{6.5}{3}\right)$
 $\theta = 65.2^\circ$