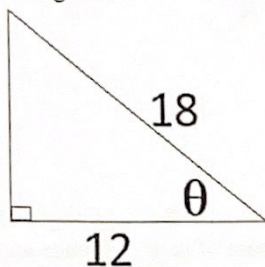


13.1-13.3 Quiz Review Warm-Up

Short Answer

Show all work to receive credit. You must use exact values, simplify all fractions & radicals along with rationalize the denominator.

1. Find the values of the six trigonometric functions for angle θ .



$$\sin \theta = \text{-----}$$

$$\cos \theta = \text{-----}$$

$$\tan \theta = \text{-----}$$

$$\csc \theta = \text{-----}$$

$$\sec \theta = \text{-----}$$

$$\cot \theta = \text{-----}$$

2. Rewrite -115° in radian measure. Show work.

3. Find the next positive coterminal angle measure to -120° in degrees. Show work.

4. Rewrite $\frac{5\pi}{6}$ radians in degree measure. Show work.

5. Find the next positive coterminal angle measure with $\frac{5\pi}{6}$ in radians. Show work.

6. Sketch the angle with measure $\frac{7\pi}{4}$ radians. Then find its reference angle. Don't forget to show the rotation of the angle.

7. Sketch the angle with measure -315° . Then find its reference angle. Don't forget to show the rotation of the angle.

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8. Find the exact values of the six trigonometric functions of θ if the terminal side of θ in standard position contains the point $(-10, -5)$. You must use simplified fractions AND simplified radicals!!!

$$\sin \theta = \text{-----}$$

$$\cos \theta = \text{-----}$$

$$\tan \theta = \text{-----}$$

$$\csc \theta = \text{-----}$$

$$\sec \theta = \text{-----}$$

$$\cot \theta = \text{-----}$$

9. Suppose $\sin \theta = -\frac{2}{5}$ is an angle in standard position whose terminal side is in quadrant III. Find the remaining trig functions. You must use simplified fractions AND simplified radicals!!!

$$\sin \theta = \text{-----}$$

$$\cos \theta = \text{-----}$$

$$\tan \theta = \text{-----}$$

$$\csc \theta = \text{-----}$$

$$\sec \theta = \text{-----}$$

$$\cot \theta = \text{-----}$$

10. Sketch the triangle, mark the right angle, show the location and measure of your reference angle, show all THREE side lengths and the point, then find the exact trig value for $\csc -\frac{3\pi}{4}$.

11. Sketch the triangle, mark the right angle, show the location and measure of your reference angle, show all THREE side lengths and the point, then find the exact trig value for $\sec -330^\circ$

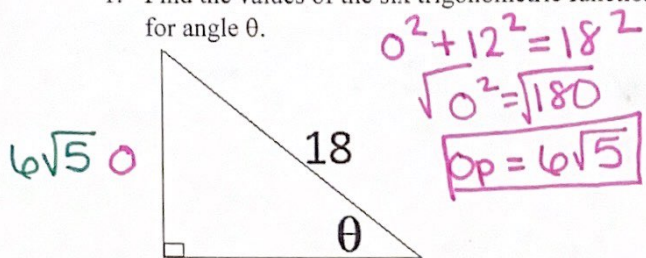
12. Sketch the triangle, mark the right angle, show the location and measure of your reference angle, show all THREE side lengths and the point, then find the exact trig value for $\tan \frac{7\pi}{6}$

13.1-13.3 Quiz Review Warm-Up

Short Answer

Show all work to receive credit. You must use exact values, simplify all fractions & radicals along with rationalize the denominator.

1. Find the values of the six trigonometric functions for angle θ .



$$\begin{aligned} \sin \theta &= \frac{6\sqrt{5}}{18} = \frac{\sqrt{5}}{3} & \sin \theta &= \frac{\sqrt{5}}{3} \\ \cos \theta &= \frac{12}{18} = \frac{2}{3} & \cos \theta &= \frac{2}{3} \\ \tan \theta &= \frac{6\sqrt{5}}{12} = \frac{\sqrt{5}}{2} & \tan \theta &= \frac{\sqrt{5}}{2} \\ \csc \theta &= \frac{18}{6\sqrt{5}} = \frac{3}{\sqrt{5}} = \frac{3\sqrt{5}}{5} & \csc \theta &= \frac{3\sqrt{5}}{5} \\ \sec \theta &= \frac{18}{12} = \frac{3}{2} & \sec \theta &= \frac{3}{2} \\ \cot \theta &= \frac{12}{6\sqrt{5}} = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5} & \cot \theta &= \frac{2\sqrt{5}}{5} \end{aligned}$$

2. Rewrite -115° in radian measure. Show work.

$$-115 \cdot \frac{\pi}{180} = \frac{-115\pi}{180 \div 5} = \boxed{-\frac{23\pi}{36}}$$

3. Find the next positive coterminal angle measure to -120° in degrees. Show work.

$$-120 + 360 = \boxed{240^\circ}$$

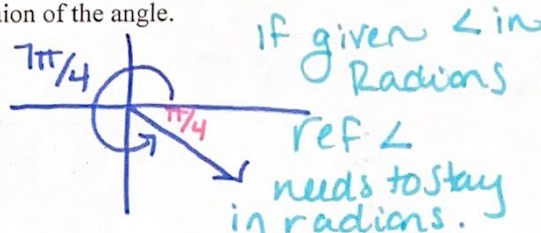
4. Rewrite $\frac{5\pi}{6}$ radians in degree measure. Show work.

$$\frac{5\pi}{6} \cdot \frac{180}{\pi} = \frac{900\pi}{6\pi} = \boxed{150^\circ}$$

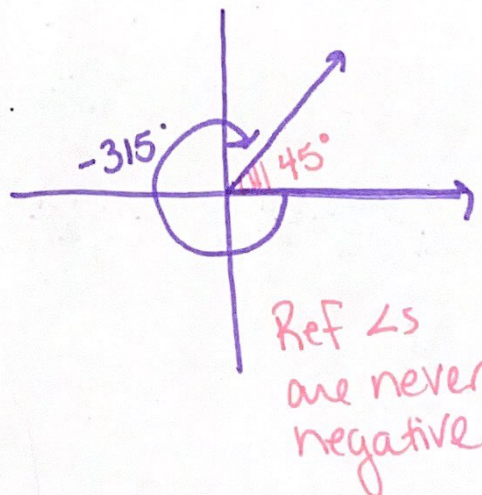
5. Find the next positive coterminal angle measure with $\frac{5\pi}{6}$ in radians. Show work.

$$\frac{5\pi}{6} + 2\pi \Rightarrow \frac{5\pi}{6} + \frac{12\pi}{6} = \boxed{\frac{17\pi}{6}}$$

6. Sketch the angle with measure $\frac{7\pi}{4}$ radians. Then find its reference angle. Don't forget to show the rotation of the angle.



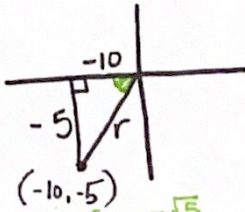
7. Sketch the angle with measure -315° . Then find its reference angle. Don't forget to show the rotation of the angle.



8. Find the exact values of the six trigonometric functions of θ if the terminal side of θ in standard position contains the point $(-10, -5)$. You must use simplified fractions AND simplified radicals!!!

$$10^2 + 5^2 = r^2 \quad r = \sqrt{25 + 25} = \sqrt{50} = 5\sqrt{2}$$

$$\sqrt{125} = r \quad r = 5\sqrt{5}$$



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

$$\cos \theta = \frac{-10}{10} = -\frac{2}{5}$$

$$\tan \theta = \frac{-5}{-10} = \frac{1}{2}$$

$$\csc \theta = \frac{5\sqrt{5}}{-5} = -\sqrt{5}$$

$$\sec \theta = \frac{5\sqrt{5}}{-10} = -\frac{\sqrt{5}}{2}$$

$$\cot \theta = \frac{-10}{-5} = 2$$

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

$$\cos \theta = -\frac{2\sqrt{5}}{5}$$

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

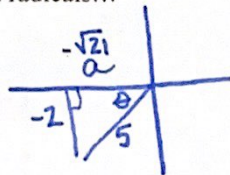
$$\csc \theta = -\sqrt{5}$$

$$\sec \theta = -\frac{\sqrt{5}}{2}$$

$$\cot \theta = 2$$

9. Suppose $\sin \theta = -\frac{2}{5}$ is an angle in standard position whose terminal side is in quadrant III. Find the remaining trig functions. You must use simplified fractions AND simplified radicals!!!

$$2^2 + a^2 = 5^2 \quad a = \sqrt{21}$$



$$\cos \theta = \frac{-2}{5}$$

$$\tan \theta = \frac{-2}{-\sqrt{21}} = \frac{2\sqrt{21}}{21}$$

$$\sin \theta = -\frac{2}{5}$$

$$\cos \theta = -\frac{\sqrt{21}}{5}$$

$$\tan \theta = \frac{2\sqrt{21}}{21}$$

$$\csc \theta = -\frac{5}{2}$$

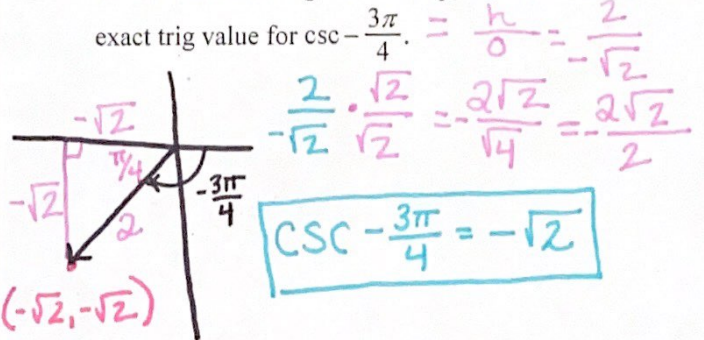
$$\sec \theta = -\frac{5\sqrt{21}}{21}$$

$$\cot \theta = \frac{\sqrt{21}}{2}$$

$$\sec \theta = -\frac{5}{\sqrt{21}} \cdot \frac{\sqrt{21}}{\sqrt{21}} = -\frac{5\sqrt{21}}{21}$$

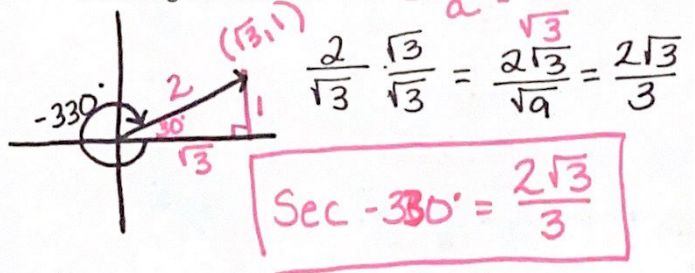
$$\cot \theta = \frac{-\sqrt{21}}{-2}$$

10. Sketch the triangle, mark the right angle, show the location and measure of your reference angle, show all THREE side lengths and the point, then find the exact trig value for $\csc -\frac{3\pi}{4}$.



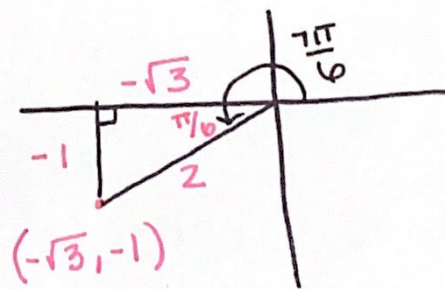
$$\csc -\frac{3\pi}{4} = -\sqrt{2}$$

11. Sketch the triangle, mark the right angle, show the location and measure of your reference angle, show all THREE side lengths and the point, then find the exact trig value for $\sec -330^\circ$.



$$\sec -330^\circ = \frac{2\sqrt{3}}{3}$$

12. Sketch the triangle, mark the right angle, show the location and measure of your reference angle, show all THREE side lengths and the point, then find the exact trig value for $\tan \frac{7\pi}{6}$.



$$\tan \frac{7\pi}{6} = \frac{\sqrt{3}}{3}$$

$$\tan \frac{7\pi}{6} = \frac{\sqrt{3}}{3}$$