

Name_____

AMDG
Acc Alg 2, period 2

Ms.Kresovic

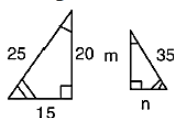
Ch 14 Quiz Review

Date_____

Directions: Complete the following problems. Write the answer in the space provided (on the right).

1. Find the complement of an angle whose measure is 18° . 1. _____2. Find the supplement of an angle whose measure is 64° . 2. _____*Perform the calculation in exercises 3 and 4.*3. $62^\circ 18' + 21^\circ 41'$ 3. _____4. $180^\circ - 124^\circ 51'$ 4. _____

5. A wheel makes 216 revolutions per minute. How many revolutions does it make per second? 5. _____

*For exercises 6–8, convert the angle to decimal degrees and round to the nearest hundredth of a degree.*6. $20^\circ 54'$ 6. _____7. $38^\circ 42' 1''$ 7. _____8. $1^\circ 35' 54''$ 8. _____*For exercises 9–11, convert the angle to degrees, minutes, and seconds.*9. 89.04° 9. _____10. 102.38° 10. _____11. 178.60° 11. _____12. Find the angle of smallest possible positive measure coterminal with -203° . 12. _____13. Find the angle of smallest possible positive measure coterminal with -415° . 13. _____14. One angle of a triangle has measure $38^\circ 18'$ and another angle has measure $62^\circ 14'$. Find the measure of the third angle. 14. _____15. Find the values of m and n in the pair of similar triangles. 15. _____*Not drawn to scale*

AMDG

16. A 90-foot-tall building casts a shadow of 22 ft at the same time that a tree casts a shadow of 8 ft. To the nearest tenth of a foot, how tall is the tree?

16. _____

Find the values of the indicated trigonometric functions for the angle θ in standard position having the given point on its terminal side. If any of these are undefined, say so.

17. (6, -8)

17. $\sin \theta$ _____

$\cos \theta$ _____

$\tan \theta$ _____

$\cot \theta$ _____

$\sec \theta$ _____

$\csc \theta$ _____

18. (0, -4)

18. $\sin \theta$ _____

$\cos \theta$ _____

$\tan \theta$ _____

$\cot \theta$ _____

$\sec \theta$ _____

$\csc \theta$ _____

19-21 are not printed (missing)

22. Find $\sin \alpha$ and $\cos \alpha$, given $\tan \alpha = \frac{7}{3}$ and $\sec \alpha < 0$.

22. $\sin \alpha$ _____

$\cos \alpha$ _____

Decide whether each statement is possible or impossible and explain why.

23. $\cos A + \sin B = 2.1$

23. _____

24. $\cot \theta = -17.05$

24. _____

25. If θ is a quadrantal angle, then what are the possible values of $\cos \theta$?

25. _____

A quadrantal angle is an angle with its terminal side on the x-axis or y-axis. That is, the angles 0° , 90° , 180° , 270° , 360° , 450° , ... as well as -90° , -180° , -270° , -360° , ... (Hint: Sketch the unit circle. Find the coordinates for these angles. Use quotient identities to solve.)

AMDG

KEY

1. 72°
2. 116°
3. $83^\circ 59'$
4. $55^\circ 9'$
5. 3.6 revolutions
6. 20.90°
7. 38.70°
8. 1.60°
9. $89^\circ 2' 24''$
10. $102^\circ 22' 48''$
11. $178^\circ 36'$
12. 157°
13. 305°
14. $79^\circ 28'$
15. $m = 28; n = 21$
16. 32.7 ft

See below 17. $\sin \theta = -\frac{4}{5}$ $\csc \theta = -\frac{5}{4}$
 $\cos \theta = \frac{3}{5}$ $\sec \theta = \frac{5}{3}$
 $\tan \theta = -\frac{4}{3}$ $\cot \theta = -\frac{3}{4}$

18. $\sin \theta = -1$ $\csc \theta = -1$
 $\cos \theta = 0$ $\sec \theta = \text{undefined}$
 $\tan \theta = \text{und.}$ $\cot \theta = \text{undefined}$
 $\frac{1}{2}$

19. $\frac{1}{2}$

20. -1

21. 5

See below 22. $\sin \alpha = -\frac{7\sqrt{58}}{58}; \cos \alpha = -\frac{3\sqrt{58}}{58}$

23. Impossible, the largest value of $\cos A$ or $\sin B$ is 1.

24. Possible, the range of $\cot \theta$ is $(-\infty, \infty)$.

25. $-1, 0, \text{ or } 1$

selected exercises

Ch 14 Review ^ worked out

Note Title

4/7/201

17. $(6, -8) \Rightarrow (\cos \theta = 6x, \text{ \& sin } \theta = -8x)$

need to include "x" $\therefore \cos \theta < |\pm 1|$

$\sin \theta < |\pm 1|$

Then pyth id: $\cos^2 \theta + \sin^2 \theta = 1$

$$(6x)^2 + (-8x)^2 = 1$$

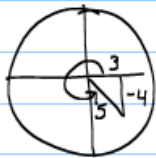
$$36x^2 + 64x^2 = 1$$

$$100x^2 = 1$$

$$x = \frac{1}{10}$$

Then unit values of the

ordered pair are $(\frac{6}{10}, -\frac{8}{10})$ or $(\frac{3}{5}, -\frac{4}{5})$



$$\cos \theta = 3/5$$

$$\sec \theta = 5/3$$

$$\sin \theta = -4/5$$

$$\csc \theta = -5/4$$

$$\tan \theta = -4/3$$

$$\cot \theta = -3/4$$

22. Let $\tan \alpha = \frac{7}{3}$ & $\sec \alpha < 0$. Find $\sin \alpha$ & $\cos \alpha$



$$\rightarrow \frac{1}{\cos \alpha} < 0 \Rightarrow x < 0$$

Quad II or III

$\tan > 0 \Rightarrow$ Quad I or III

$\therefore$ we already know both $\sin \alpha$ & $\cos \alpha < 0$

$$\tan \alpha = \frac{7}{3} \Rightarrow \frac{\sin \alpha}{\cos \alpha} = \frac{-7x}{-3x}$$

Pyth ID: $\cos^2 \alpha + \sin^2 \alpha = 1$

$$(-3x)^2 + (-7x)^2 = 1$$

$$9x^2 + 49x^2 = 1$$

$$58x^2 = 1$$

$$x^2 = \frac{1}{58}$$

$$x = \frac{\sqrt{1}}{\sqrt{58}} \frac{\sqrt{58}}{\sqrt{58}}$$

rationalize the denominator

$$x = \frac{\sqrt{58}}{58}$$

Then $\cos \alpha = -\frac{3\sqrt{58}}{58}$ & $\sin \alpha = -\frac{7\sqrt{58}}{58}$