Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Algebra 2 - Trig Ratios - Study Guide

Degrees to Radians

1. Express the angle 45º in radians. Your answer should include π.

2. Express the angle 320º in radians. Your answer should include π.

3. Rewrite $675°$ in radian measure as a multiple of π.

Radians to Degrees

4. Write the angle $\frac{3\pi}{5}$ radians in degrees.

5. Write the angle $-\frac{7\pi}{4}$ radians in degrees.

6. Rewrite $-\frac{7\pi}{18}$ in degree measure.

Quadrant of an Angle

7. Determine the quadrant in which an angle, θ, lies if $\theta = \frac{5\pi}{4}$.

8. In which quadrant does the terminal side of a 118º angle lie?

Coterminal

9. Find the measure of an angle between 0º and 360º coterminal with an angle of –110º in standard position.

10. Determine two coterminal angles (one positive and one negative) for $\theta = -489°$.

11. Determine two coterminal angles (one positive and one negative) for $\theta = \frac{3\pi}{4}$.

Rationalize the Denominator

12. Rewrite $\frac{\sqrt{5}}{\sqrt{3}}$ without radicals in the denominator.

13. Rewrite $\frac{2}{\sqrt{7}}$ without radicals in the denominator.

Using the Unit Circle

14. Find the exact value for $\tan 60^o$

15. Determine the exact value of $\sin(225°)$.

16. Determine the exact value of $\sin(-315°)$.

17. Determine the exact value of $\sec 300^{o}$.

18. Find the exact value for $\cos \frac{\pi}{4}$

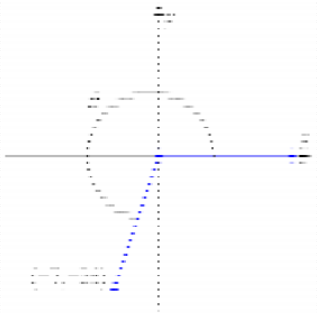
19. Determine the exact value of the sine of the angle π.

20. Find the exact value for $\cot \frac{5\pi}{3}$.

21. Find the exact value of $\sin\left(-\frac{4\pi}{3} \text{ radians}\right)$.

X, Y, and R (not unit circle)

22. Given the figure below, determine the value of $\sin\theta$.



23. Find the value of r for the ordered pair (2, -6).

24. The point $(8, 15)$ is on the terminal side of an angle in standard position. Determine the exact value of $\cos\theta$.

25. The point $(-5, -12)$ is on the terminal side of an angle in standard position. Determine the exact value of $\tan\theta$.

26. If θ is in quadrant I and $\cot\theta = \frac{1}{3}$, determine $\sin\theta$.

27. If θ is in quadrant II $\csc\theta = \frac{1}{4}$, determine $\sin\theta$.

28. If θ is in quadrant IV $\tan\theta = -5$, determine $\cos\theta$.

Graphs

29. What is the amplitude of $f(x) = -12\cos(4x)$?

30. What is the amplitude of $f(x) = \frac{2}{5}\sin(x)$?

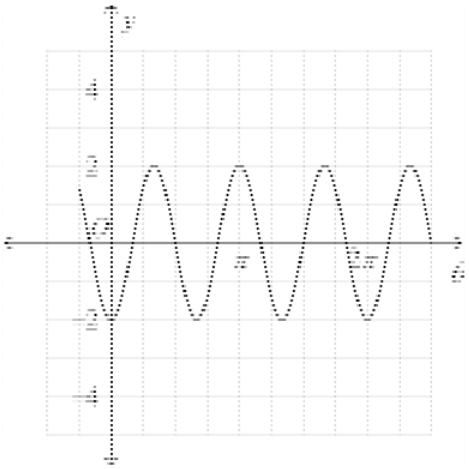
31. What is the period of $f(x) = \frac{2}{5}\sin(x)$?

32. What is the period of $f(x) = 5\cos(3x) - 2$?

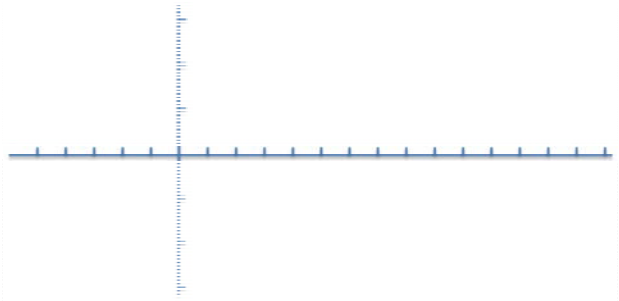
33. What is the midline of $f(x) = 4\cos(2x) - 5$?

34. What is the midline of $f(x) = 4\cos(2x) - 5$?

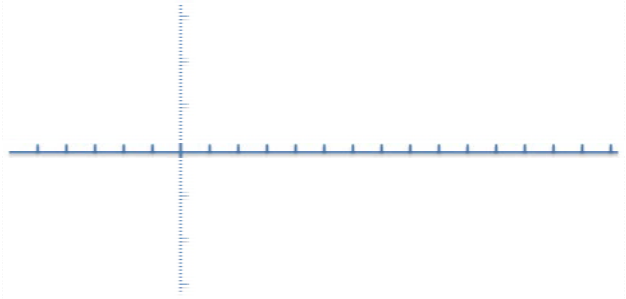
35. Write a cosine function for the graph.



36. Sketch the graph of $2\cos(x)$. Include labels on the axes.

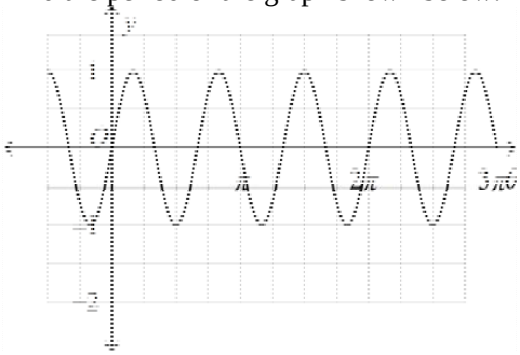


37. Sketch the graph of $3\sin(2x)$. Include labels on the axes.



Name: _____ **ID: A**

38. Find the period of the graph shown below.



39. Find the amplitude of the sine curve shown below.