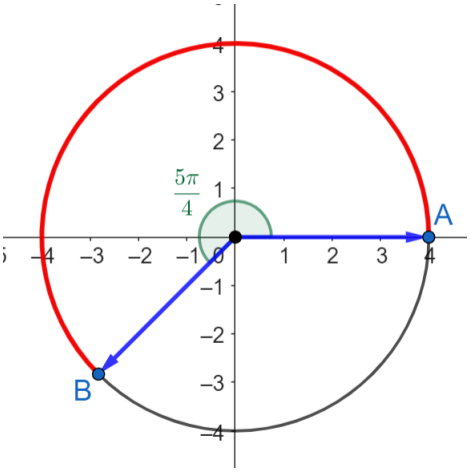
Radians and Angle Vocabulary (3.2) HW

1. The figure to the right gives an angle in standard position with measure $\frac{5\pi}{4}$ and a circle with radius 4 in the xy-plane. What is the length of the major arc of the circle from the point A to the point B? (The major arc is the larger of the two arcs connecting these points. If you are looking at a color version of this homework, it is shown in red)



Determine the quadrant in which the given angle terminates. Or, if the angle is quadrantal, state the axis on which the terminal ray lies.

2. $\frac{4\pi}{3}$

3. $-\frac{6\pi}{5}$

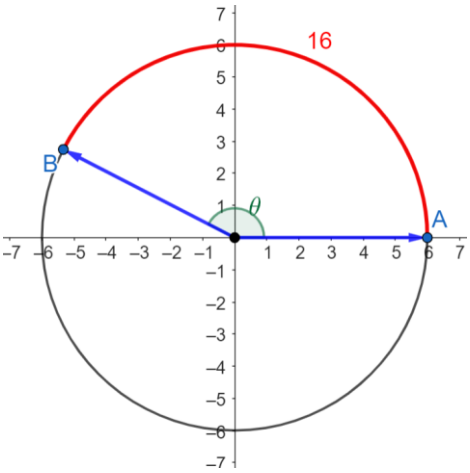
4. $\frac{11\pi}{2}$

5. $\frac{9\pi}{5}$

6. $\frac{7\pi}{6}$

7. $-\frac{3\pi}{4}$

8. The figure to the right gives an angle in standard position with unknown measure and a circle with radius 6 in the xy-plane. The length of the minor arc from the point A to the point B is 16. Find the measure of θ. (The minor arc is the smaller of the two arcs connecting these points)



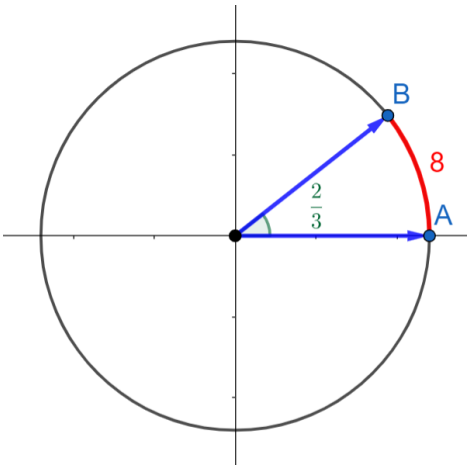
In questions #9-11, list four angles coterminal to the given angle. Give two positive answers and two negative answers for each question.

9. $\theta = \frac{2\pi}{3}$

10. $\theta = \frac{\pi}{4}$

11. $\theta = \frac{11\pi}{6}$

12. The figure to the right gives an angle in standard position with measure $\frac{2}{3}$ radians and a circle with an unknown radius centered at the origin. The length of the minor arc from the point A to the point B is 8. Find the radius of the circle. (The minor arc is the smaller of the two arcs connecting these points)



In questions #13-18, find the reference angle for the given angle.

13. $\frac{5\pi}{4}$

15. $\frac{11\pi}{6}$

17. $-\frac{7\pi}{6}$

14. $-\frac{2\pi}{3}$

16. $\frac{13\pi}{4}$

18. $\frac{12\pi}{5}$

Match each of the following angles to one of the graphs positioned below.

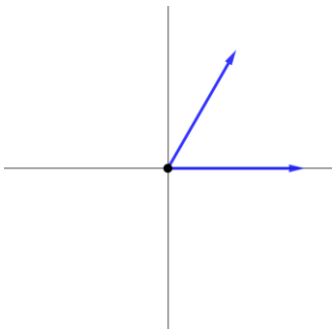
19. $\frac{13\pi}{6}$

20. $-\frac{5\pi}{3}$

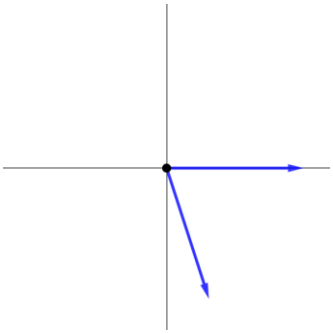
21. $-\frac{2\pi}{5}$

22. 6

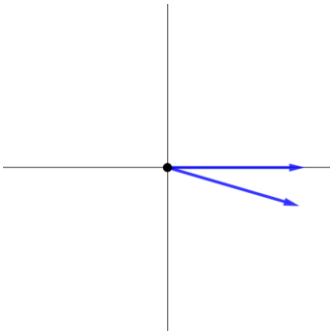
(A)



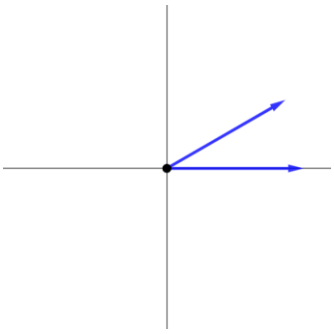
(B)



(C)



(D)



Radians and Angle Vocabulary (3.2) HW Answers

1. $s = \theta r$
   $s = \left(\frac{5\pi}{4}\right)(4)$
   $s = 5\pi$
2. 3rd Quadrant
3. 2nd Quadrant
4. Quadrantal angle on the negative y-axis
5. 4th Quadrant
6. 3rd Quadrant
7. 3rd Quadrant
8. $s = \theta r$
   $16 = (\theta)(6)$
   $\theta = \frac{16}{6} = \frac{8}{3}$
9. Possible negative answers: $-\frac{4\pi}{3}, -\frac{10\pi}{3}, -\frac{16\pi}{3}, -\frac{22\pi}{3}, \ldots$
   Possible positive answers: $\frac{8\pi}{3}, \frac{14\pi}{3}, \frac{20\pi}{3}, \frac{26\pi}{3}, \ldots$
10. Possible negative answers: $-\frac{7\pi}{4}, -\frac{15\pi}{4}, -\frac{23\pi}{4}, -\frac{31\pi}{4}, \ldots$
    Possible positive answers: $\frac{9\pi}{4}, \frac{17\pi}{4}, \frac{25\pi}{4}, \frac{33\pi}{4}, \ldots$
11. Possible negative answers: $-\frac{\pi}{6}, -\frac{13\pi}{6}, -\frac{25\pi}{6}, -\frac{37\pi}{6}, \ldots$
    Possible positive answers: $\frac{23\pi}{6}, \frac{35\pi}{6}, \frac{47\pi}{6}, \frac{59\pi}{6}, \ldots$
12. $s = \theta r$
    $8 = \left(\frac{2}{3}\right)(r)$
    $r = 12$
13. $\frac{\pi}{4}$
14. $\frac{\pi}{3}$
15. $\frac{\pi}{6}$
16. $\frac{\pi}{4}$
17. $\frac{\pi}{6}$
18. $\frac{2\pi}{5}$
19. D
20. A
21. B
22. C