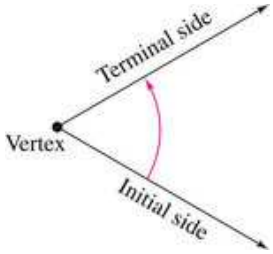
Radian Measure (Section 4.1)

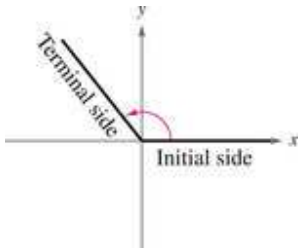
1. An angle is determined by _____.

The starting position of the ray is the _____ of the angle, and the position after rotation is the _____. The endpoint of the ray is the _____ of the angle.



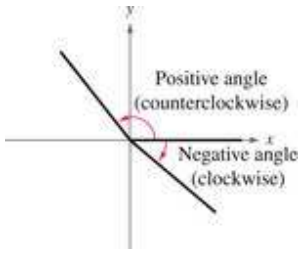
2. It is convenient to position an angle on a coordinate graph with the vertex at the _____ and the initial side on the _____.

This is called _____ position.



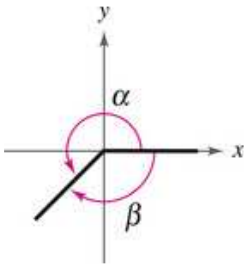
3. Positive angles are generated by _____.

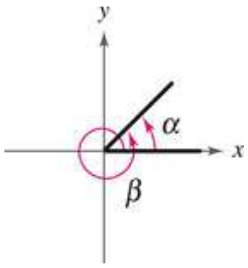
Negative angles are generated by _____.



Radian Measure (Section 4.1)

4. Angles that have the same initial and terminal sides are called _____.

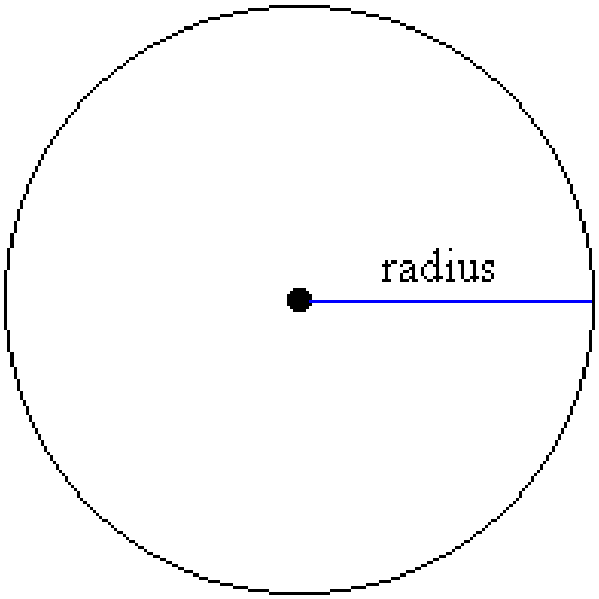




Radian Measure

5. The measure of an angle is determined by _____

_____.



Definition of Radian

One radian is the measure of a central angle θ that intercepts an arc ***s*** equal in length to the radius ***r*** of the circle.

Formula:

6. From the above exercise about how many radians are there in one full revolution ?

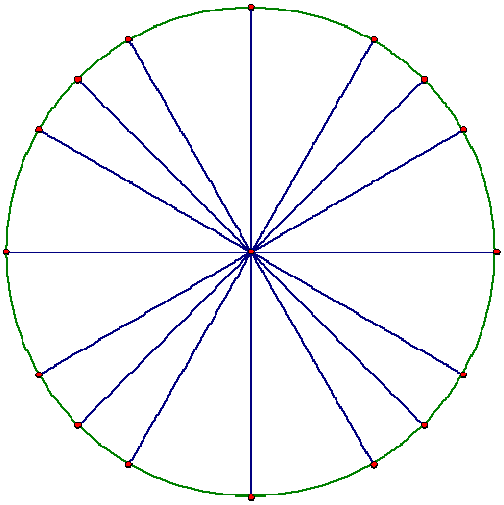
7. The arc length of one full revolution is equal to _____.

Radian Measure (Section 4.1)

8. Therefore, using the formula above, one full revolution is exactly _____ radians.

9. Is the answer for #8 consistent with the answer from the exercise? Explain.

10. Fill out the common radian measures on the circle below.



Finding and Sketching Coterminal Angles

Example: Find two coterminal angles by adding and subtracting 2π. Sketch.

a) $\theta = \frac{13\pi}{6}$ b) $\theta = \frac{3\pi}{4}$ c) $\theta = -\frac{2\pi}{3}$

d) $\theta = \frac{9\pi}{4}$ e) $\theta = \frac{5\pi}{6}$ f) $\theta = -\frac{3\pi}{4}$