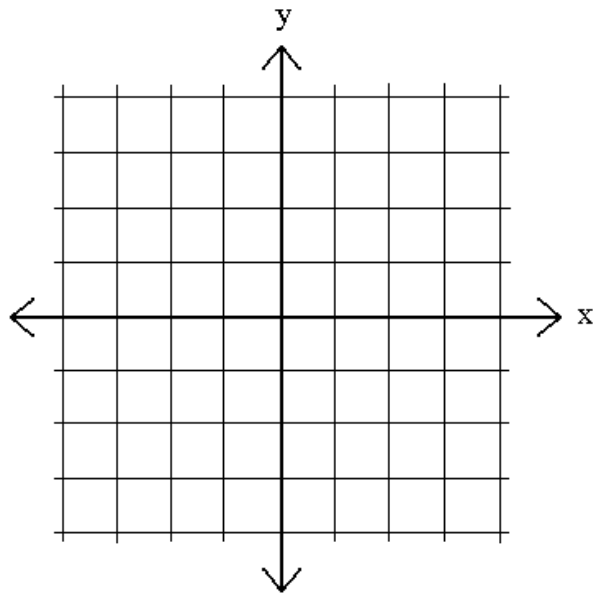


Standard Angle Positions

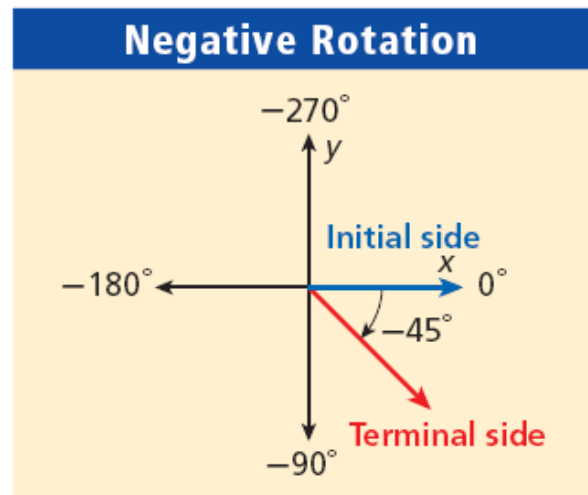
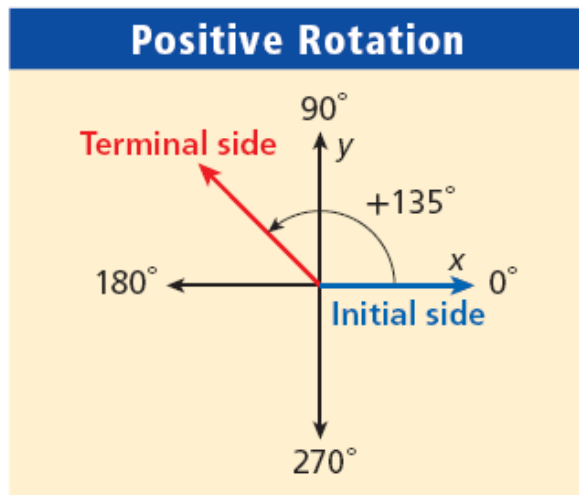
Let's say I want to draw a circle in the xy -plane:



How many degrees would be in a circle?

An angle is in **standard position** when its vertex is at the origin and one side is on the positive x -axis.

- The **initial side** of the angle is the ray on the x -axis.
- The other ray is called the **terminal side** of the angle.



Standard Angle Positions

Example #1: Draw an angle with the given measure in standard position.

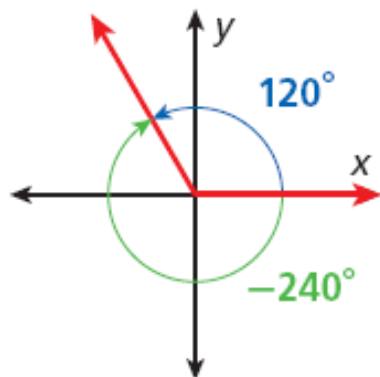
A. 320°

B. -110°

C. 990°

Coterminal angles are angles in standard position with the same terminal side.

Find 3 additional angles that are co-terminal with 120° .



For an angle θ in standard position, the **reference angle** is the positive acute angle formed by the terminal side of θ and the x -axis.

Example #2: Find the reference angle of each angle below:

200°

295°

100°

20°

Standard Angle Positions

Example #3:

Find the sine, cosine, and tangent values for 300°

(Be sure to consider the reference angle!)

You try:

Find the sine, cosine, and tangent values for 210°

Find the sine, cosine, and tangent values for -210°