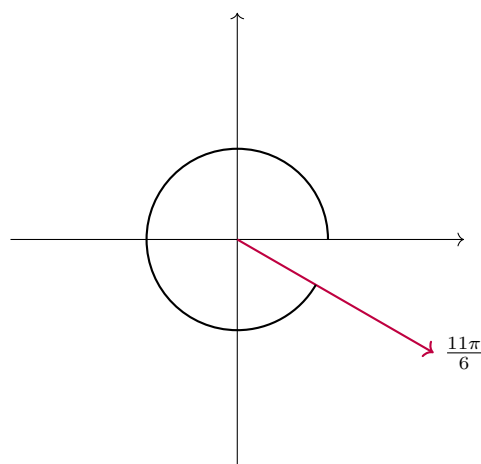
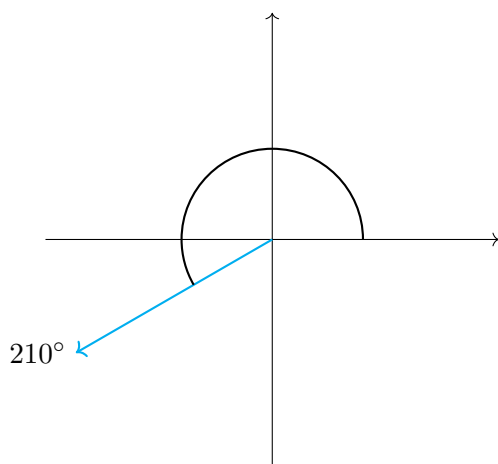
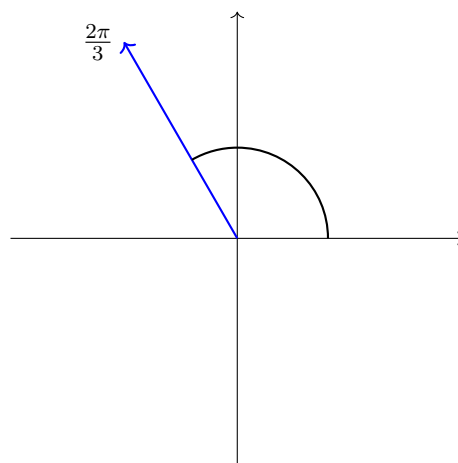
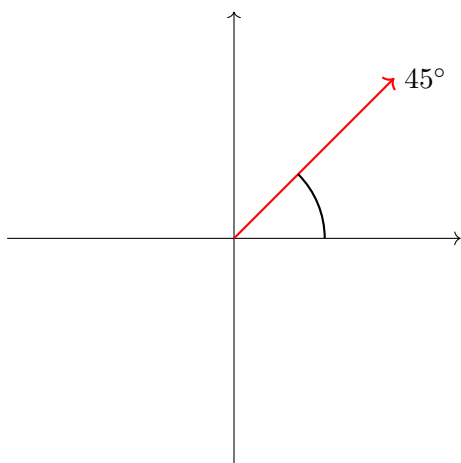


Unit Circle and Reference Angles

Definition. The **reference angle** of an angle θ is the positive acute angle formed between the terminal side of a given angle and the x -axis.

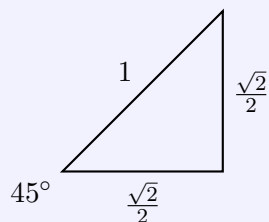
Example. Compute the reference angle of the following angles.



Special Triangles

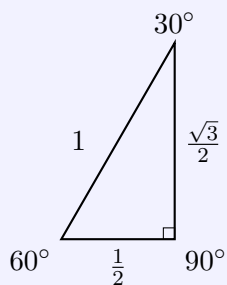
45-45-90 Triangles

Theorem. If a right triangle has angles measuring 45° , 45° , and 90° , and the hypotenuse is of length 1, then both legs have length $\frac{\sqrt{2}}{2}$.



30-60-90 Triangles

Theorem. If a right triangle has angles measuring 30° , 60° , and 90° , and the hypotenuse is of length 1, then the sides are:



The Unit Circle

The **unit circle** is the circle with radius 1, centered at the origin. Its equation is given by:

$$x^2 + y^2 = 1$$

