**PreCalculus 10.4 Hyperbolas**

**Hyperbola –** all points where the difference of the distances from two fixed points (foci) is a constant.

**Standard Form of a Hyperbola** (with center at the point )

foci are *c* units from center

where

**Graphing a Hyperbola**

Example:

Example:

Example: Find the standard form of the hyperbola with center at the origin, vertices and foci .

Example: Find the standard form of the hyperbola with: foci and

vertices and

Example: Find the standard form of the hyperbola with: vertices and

passes through

**Classifying a Conic Section from its General Equation**

Circle

Parabola (*A* or *C* is 0)

Ellipse (*A* and *C* are the same sign)

Hyperbola (*A* and *C* are the different signs)

Examples: