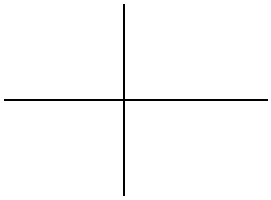
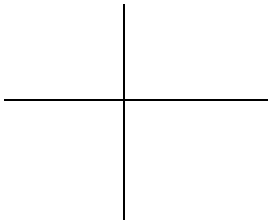
Understanding Angles

- angles can be located anywhere in the x-y plane
- the x and y-axis divide the x-y plane into 4 quadrants



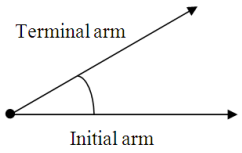
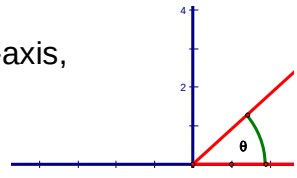
Vertex –

Initial arm –

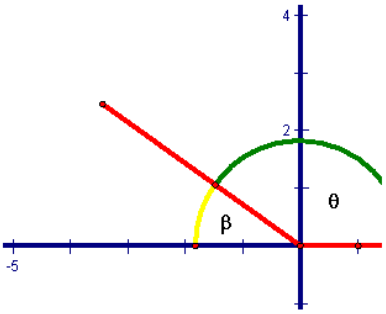


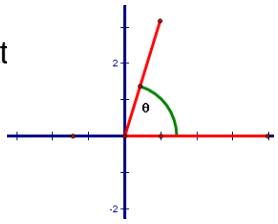
Terminal arm -

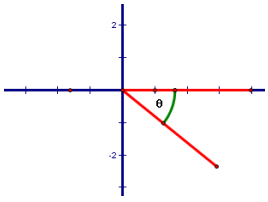
Angle -

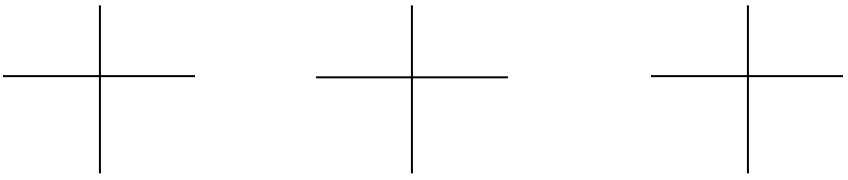
Angle	Formed by two rays that share a common endpoint. 
Measure of an Angle	The size of an angle. The rotation between the initial arm and terminal arm of the angle. Angles are often measured in degrees.
Standard Position	An angle drawn with its initial arm on the x-axis, and endpoint the origin. 

Principal Angle	The counterclockwise angle between the initial arm and the terminal arm of an angle in standard position. θ is the principal angle. Its value lies between $0° \le \theta \le 360°$
Related Acute Angle	An angle formed between the terminal arm and the x-axis. β is the related acute angle. -always positive -always between 0 and 90°
Positive Angle	Angle formed by counter-clockwise rotat
Negative Angle	Angle formed by clockwise rotation.
Coterminal Angle	Angles in standard position that share the same terminal arm









Example 1: Given $\theta = -150°$, determine the principal angle and the related acute angle.

Example 2: Given the following angles, sketch the angle, the next coterminal angle, the first negative angle and determine the related acute angle.

a) $\theta = 35°$ b) $\theta = 140°$ c) $\theta = 240°$