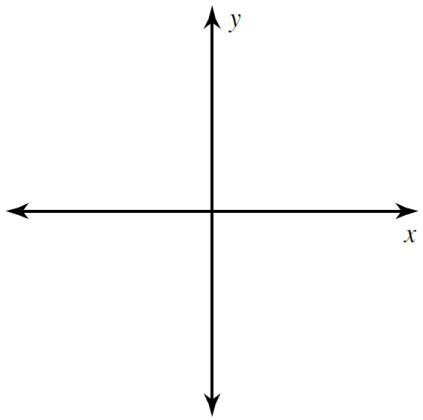
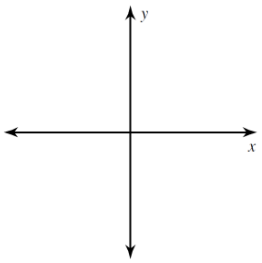
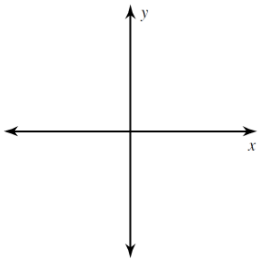
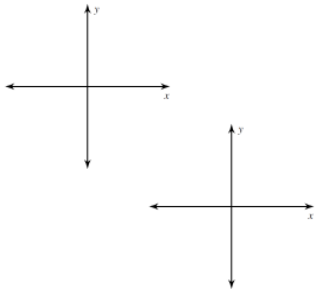
8.1 (Part I) – Angles and Angle Measure

General Angle in Standard Position	Various Types of Common Angles		
– **angle** → _____	**Positive Angles**	**Negative Angles**	**Quadrant Angles**
	 ▪ rotation is _____ ▪ arrow is _____	 ▪ rotation is _____ ▪ arrow is _____	 ▪ Terminal side falls on a.) x-axis like _____ b.) y-axis like _____

Angle Measurement # 1 – Degrees (with °)	Angle Measurement # 2 – Radians (with π)
To convert from degrees (°) to radians (π) → _____	To convert from radians (π) to degrees (°) → _____
Ex: Convert given degree measure to radians: a.) 45° → _____ b.) 300° → _____	Ex: Convert given radian measure to degrees: a.) $\frac{\pi}{3}$ → _____ b.) $\frac{5\pi}{6}$ → _____

Example 1: Draw each angle in standard position. Draw the arrow of angle's direction.

a.) $\theta = 48°$	b.) $\theta = -212°$	c.) $\theta = 270°$	d.) $\theta = \frac{4\pi}{3}$	e.) $\theta = -\frac{\pi}{6}$	f.) $\theta = -\pi$

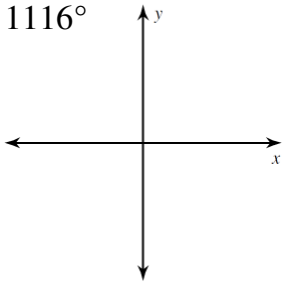
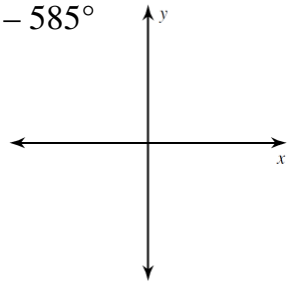
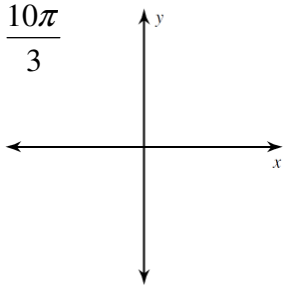
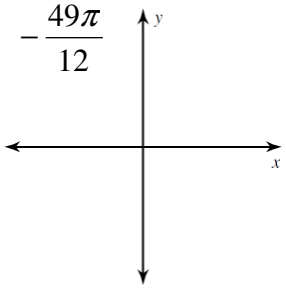
– **coterminal angles** → angles that _____ (end in the same place)

- To find a POSITIVE coterminal → _____ (if in deg) or _____ (if in rads)
- To find a NEGATIVE coterminal → _____ (if in deg) or _____ (if in rads)
- Coterminal angles can contain _____ (I call these "swirlies")

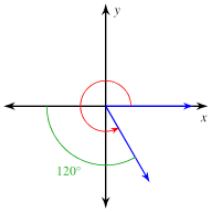
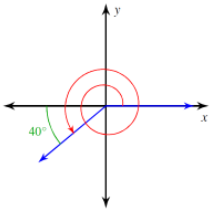
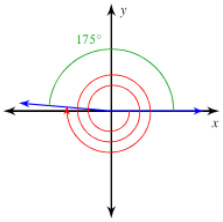
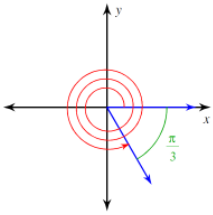
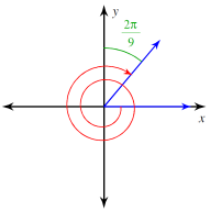
Example 2a: Find a positive and negative coterminal angle for the given angle θ.

i.) $\theta = 60°$ →	ii.) $\theta = \frac{7\pi}{6}$ →
positive coterminal angle = _____ negative coterminal angle = _____	positive coterminal angle = _____ negative coterminal angle = _____

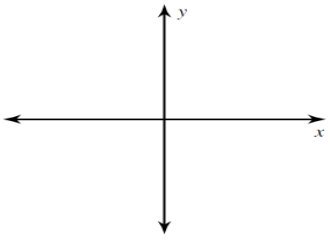
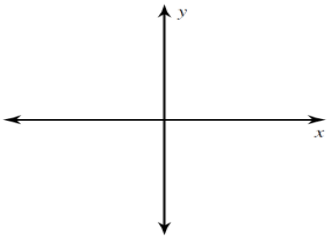
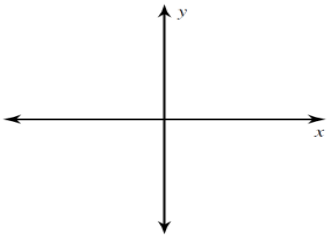
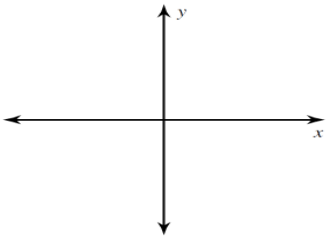
Example 2b: Find and draw an angle between 0° and 360° that is coterminal with the given angle.

i.) $1116°$	ii.) $-585°$	iii.) $\frac{10\pi}{3}$	iv.) $-\frac{49\pi}{12}$
			

Example 2c: Find the measure of each angle using the given picture. Keep units consistent.

i.)	ii.)	iii.)	iv.)	v.)
				

– **reference angle** → an angle B associated with angle θ where B is an _____ formed by the terminal side of _____

Angle θ Falls in QI	Angle θ Falls in QII	Angle θ Falls in QIII	Angle θ Falls in QIV
			
Formula: _____	Formula: _____	Formula: _____	Formula: _____

Example 3: Find the reference angle B given angle θ. Make sure angle θ is between 0° and 360°

angle θ	Quadrant θ Lies	Work to find angle B	reference angle B
a.) 120°			
b.) 53°			
c.) 948°			
d.) – 765°			