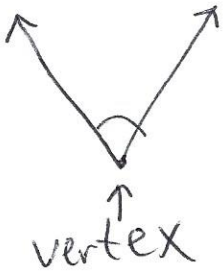
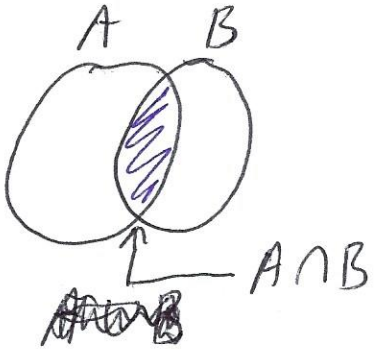
2/5/19

A ray is a point on a line, together with all points of the side on one side of that point.

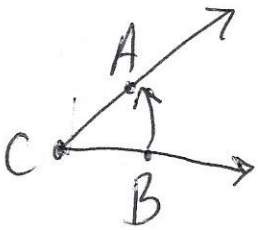


, write "$\overrightarrow{CA}$"

An angle is the union of two rays with a common endpoint.



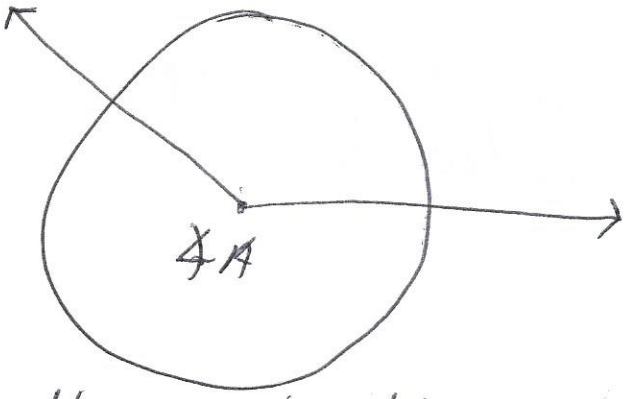
$\overrightarrow{CB}$ is the initial ray of $\angle ACB$ and
$\overrightarrow{CA}$ is the terminal ray of $\angle ACB$



An angle is often thought of as being formed by rotating one ray away from a fixed ray as indicated (by the measure of the angle) and an arrow (to indicate direction).

2/5/19

- The "fixed" ray is the initial ray.
- The "rotating" ray is the terminal ray.
- An angle whose vertex is the center of a circle is called a central angle of that circle



- The arc of the circle through which the terminal side moves is the intercepted arc.
- An angle in standard position is located in a rectangular coordinate system with the vertex at the origin and the initial side on the positive x-axis.
- The measure of an angle, α, denoted by $m(\alpha)$, indicates the amount of rotation necessary to travel from the initial ray to the terminal ray.

2/5/19

- The measure of a central angle where the terminal ray travels around the circle exactly once is 360°.
- An acute angle has measure between 0° and 90°.
- A right angle measures exactly 90°.
- An obtuse angle measure between 90° and 180°.
- A straight angle measures exactly 180°.
- A quadrantal angle has terminal side on one of the axes.
- Coterminal angles have the same initial ray and terminal ray

Ex: Suppose α is an angle in standard position and α and β are coterminal angles. Name β by its measure for each given α.

1) $\alpha = 90°$

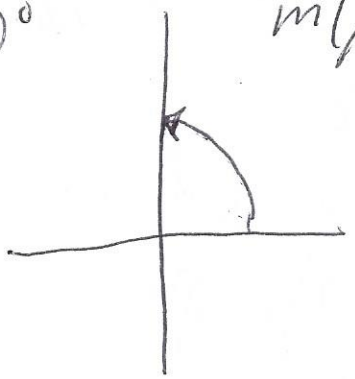
2) $\alpha = 270°$

3) $\alpha = -45°$

4) $\alpha = 0°$

2/5/19

1. $\alpha = 90°$

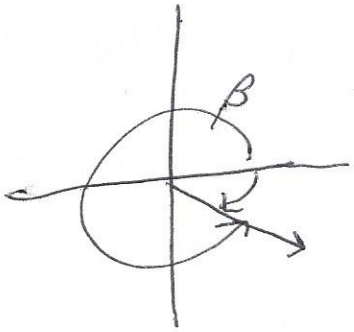


$m(\beta) = 270°$

$\beta = -270°$

~~2) $\alpha = 270°$~~

3) $\alpha = -45°$



$\beta = 315°$

2) $\alpha = 270°$, so $\beta = -90°$

4) $\alpha = 0°$, so $\beta = \pm k(360°)$

To find the radian measure of an angle in standard position, we would measure the distance travelled as the terminal ray follows along the unit circle.

* Angles α and β in standard position are coterminal if and only if their measures differ by a multiple of 360°. *

i.e. $m(\alpha) = m(\beta) + k(360°)$ for some integer k.