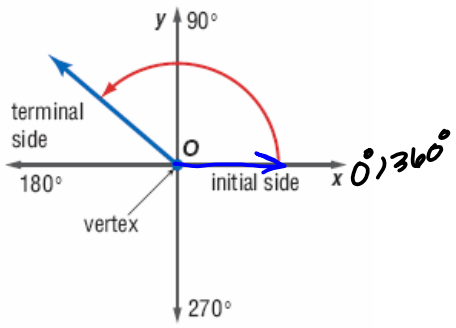
12-2A Angles & Angle Measures

Angle Measures on a Coordinate Plane

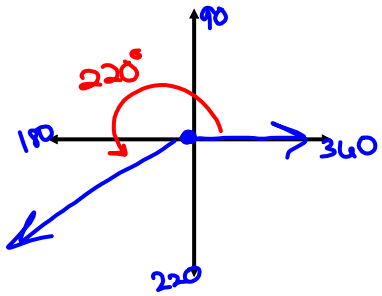
Standard Position: An angle with vertex (0, 0) and initial side on the x-axis.

- ***initial side:*** the ray of the angle fixed along the positive x-axis.
- ***terminal side:*** the ray of the angle that can rotate about the center.

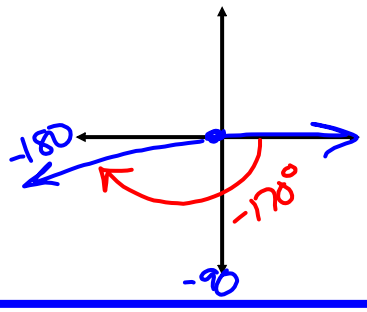
Quadrantal Angles: when the terminal side lies on one of the axes.
- 0°, 90°, 180°, 270°, 360°



Positive Angle Measure: terminal side rotates **counterclockwise** about the center. (ex: 220°)

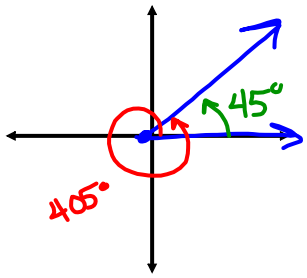


Negative Angle Measure: terminal side rotates **clockwise** about the center. (ex: -170°)



Coterminal Angles: angles that have the **same** terminal side when in standard position. (ex: 405° and 45°)

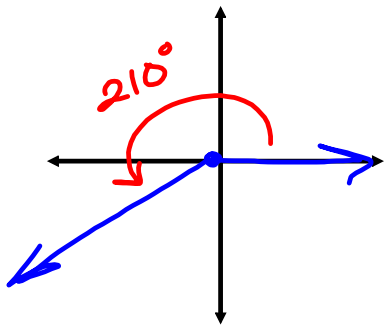
-360
$45°$



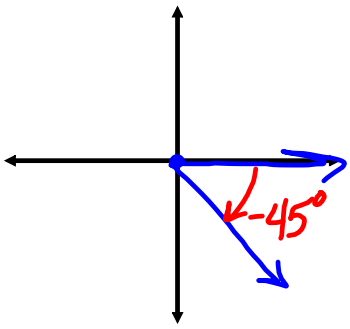
Examples:

1. ***Draw an angle with the given measure in standard form.***

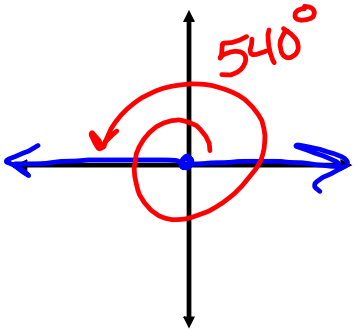
a. 210º



b. -45º



c. 540º



2. ***Find one positive and one negative angle measure that is coterminal with each of the following angles.***

a. 210º

$210 + 360 = 570°$

$210 - 360 = -150°$

b. -45º

$-45 + 360 = 315°$

$-45 - 360 = -405°$

c. 540º

$540 - 360 = 180°$

$180 - 360 = -180°$

$540 + 360 = 900°$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