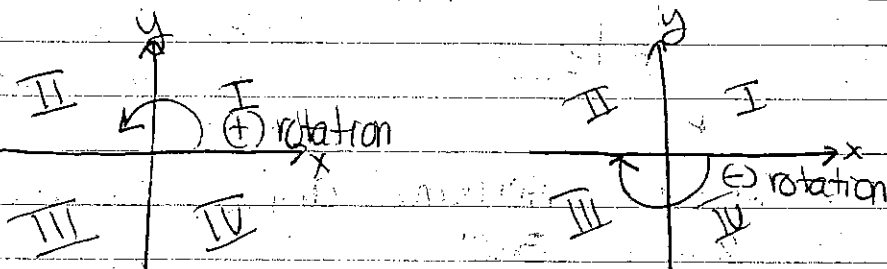


Adv Alg

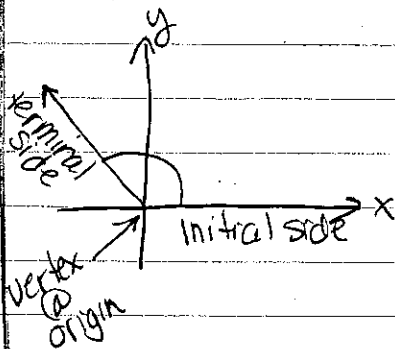
How do we find reference + coterminal angles?



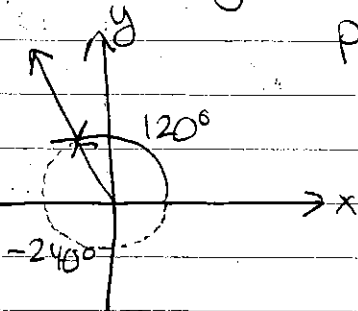
counter clockwise: (+) rotation  $\Rightarrow$  (+) angle

clockwise: (-) rotation  $\Rightarrow$  (-) angle

Standard Position: when the initial side of one ray is on the positive x-axis and vertex is at origin



Coterminal Angle: when two angles in standard position have the same terminal side.



$120^\circ$  and  $-240^\circ$  have the same terminal side.

$\therefore 120^\circ$  and  $-240^\circ$  are coterminal angles.

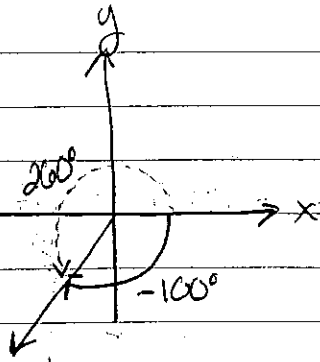
Note:  $120^\circ - 360^\circ = -240^\circ$

$-240^\circ + 360^\circ = 120^\circ$

So if  $\cos(120^\circ) = -\frac{1}{2}$ , then  $\cos(-240^\circ) = -\frac{1}{2}$

$\therefore$  cosine & sine values are the same for coterminal angles!!!

ex)



$260^\circ$  and  $-100^\circ$  are coterminal.

Note:  $260^\circ - 360^\circ = -100^\circ$   
 $-100^\circ + 360^\circ = 260^\circ$

To find coterminal angles, add/subtract  $2\pi$  or  $360^\circ$

Reference Angles: the acute angle formed by the terminal side of a given angle and the x-axis. Reference angles are always positive.

