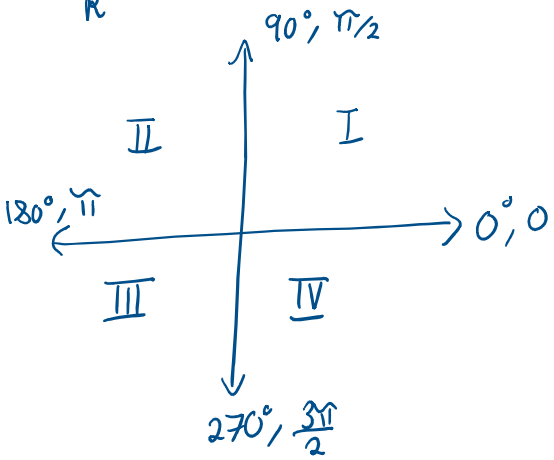
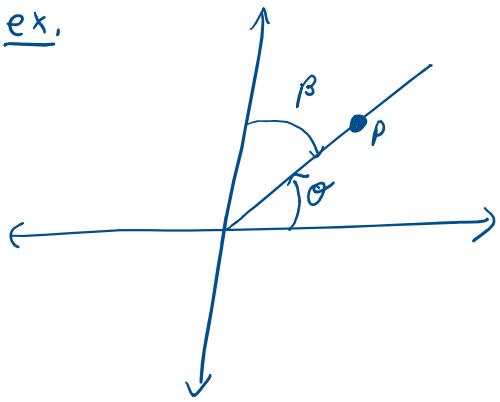
No class Friday. Notes sent via E-mail.
Written HW 7 Due via E-mail (by Noon)
Written HW 8 Due via E-mail
Friday April 2nd virtual class.
2nd week reminder of Exam 3 (April 8 @ 8pm)

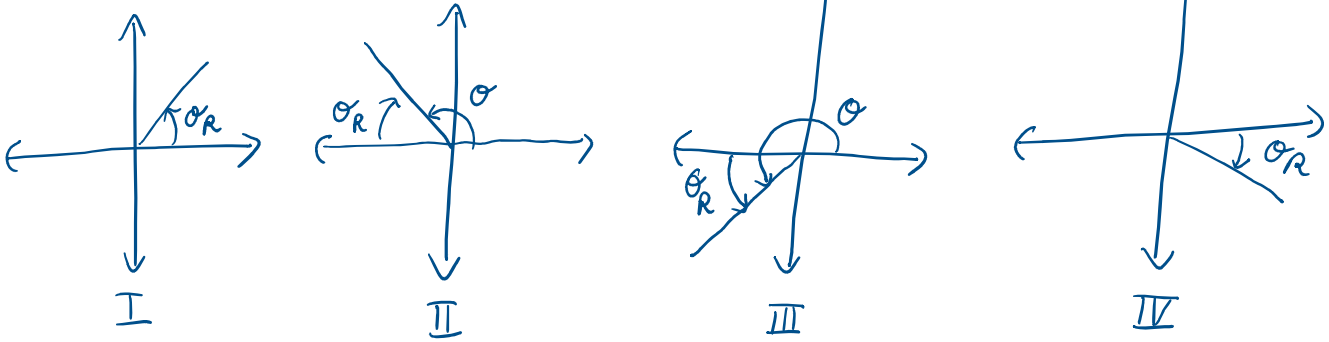
Lesson 23 (continued)

Reference Angles: The reference angle of θ is the acute angle θ_R that the terminal side of θ makes with the x-axis.



ex.





	I	II	III	IV
deg	θ	$180° - \theta$	$\theta - 180°$	$360° - \theta$
radians	θ	$\pi - \theta$	$\theta - \pi$	$2\pi - \theta$

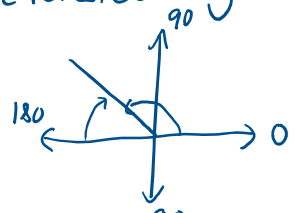
Ex 5: Find the reference angle θ_R.

90

$\theta - 180° - 132° = 48°$

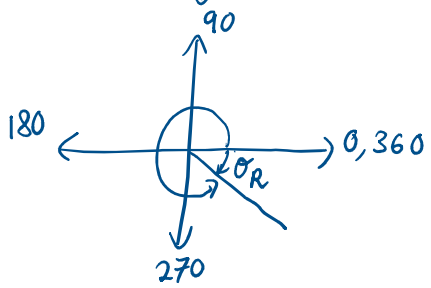
Ex 5: Find the reference angle θ_R.

(a) $\theta = 132^\circ$



$\theta_R = 180^\circ - 132^\circ = 48^\circ$

(b) $\theta = 311^\circ$



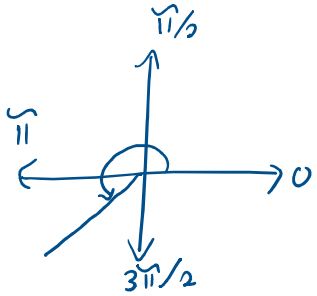
$\theta_R = 360^\circ - 311^\circ = 49^\circ$

(c) $\theta = 236^\circ$

(d) $\theta = -120^\circ$

(e) $\theta = \frac{5\pi}{4}$

$= \pi + \frac{\pi}{4}$



$\theta_R = \theta - \pi$

$= \pi + \frac{\pi}{4} - \pi = \frac{\pi}{4}$

(f) $\theta = \frac{17\pi}{6}$

(g) $\theta = -\frac{7\pi}{3}$