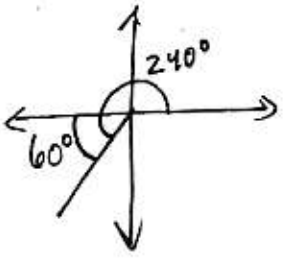
Solution HW #7
Math 143

Section 6.4

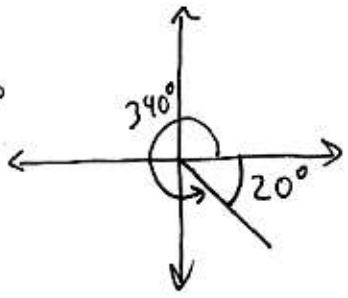
(1) (a) $240°$

$\theta_R = 60°$



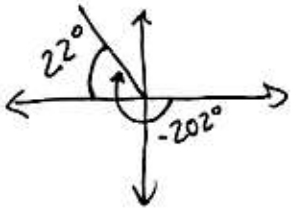
(b) $340°$

$\theta_R = 20°$



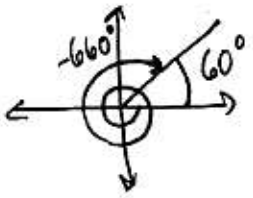
(c) $-202°$

$\theta_R = 22°$



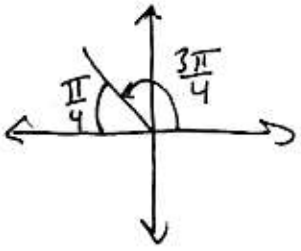
(d) $-660°$

$\theta_R = 60°$



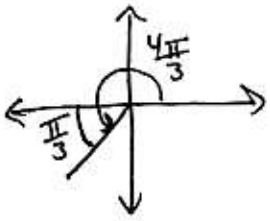
(3) (a) $\frac{3\pi}{4}$

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



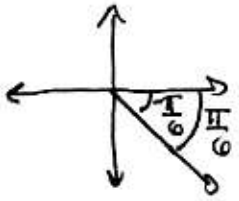
(b) $\frac{4\pi}{3}$

$\theta_R = \frac{\pi}{3}$



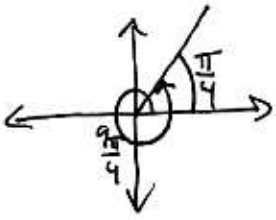
(c) $-\frac{\pi}{6}$

$\theta_R = \frac{\pi}{6}$



(d) $\frac{9\pi}{4}$

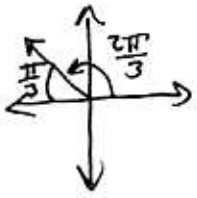
$\theta_R = \frac{\pi}{4}$



(7) (a) $\sin\left(\frac{2\pi}{3}\right)$

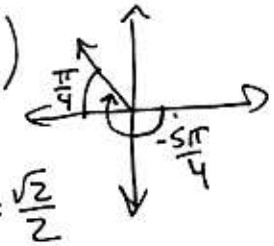
$\theta_R = \frac{\pi}{3}$

$\sin\left(\frac{2\pi}{3}\right) = \frac{\sqrt{3}}{2}$

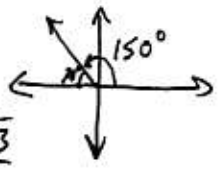


(b) $\sin\left(-\frac{5\pi}{4}\right)$

$\sin\left(-\frac{5\pi}{4}\right) = \frac{\sqrt{2}}{2}$



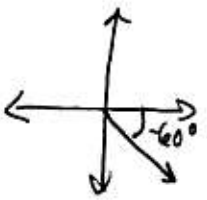
(9) (a) $\cos 150°$



$\cos 150° = -\frac{\sqrt{3}}{2}$

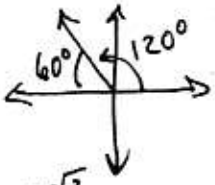
(b) $\cos(-60°)$

$\theta_R = 60°$



So $\cos(-60°) = \frac{1}{2}$

(13) (a) $\cot 120°$

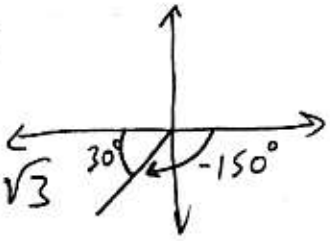


$\theta_R = 60°$

$\cot 120° = -\frac{\sqrt{3}}{3}$

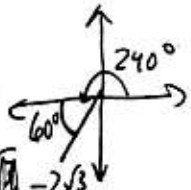
(b) $\cot(-150°)$

$\theta_R = 30°$



$\cot(-150°) = \sqrt{3}$

(17) (a) $\csc(240°)$

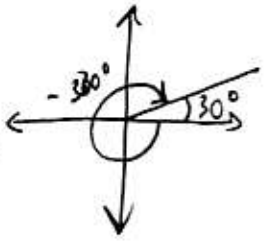


$\theta_R = 60°$

$\csc(240°) = -\frac{2\sqrt{3}}{3}$

(b) $\csc(-330°)$

$\theta_R = 30°$



$\csc(-330°) = 2$

(21) (a) $\tan(21°10') = \tan(21.16666)$

≈ 0.387

(b) $\cot(1.13) \approx 0.472$

(25) (a) $\cos\theta = 0.8620$

$\theta = \cos^{-1}(0.8620)$

$\theta = 30.46°$

(b) $\theta \approx 30°28'$

(31) (a) $\sec\theta = 4.246$

$\frac{1}{\cos\theta} = 4.246$

$\cos\theta = \frac{1}{4.246}$

$\theta = \cos^{-1}\left(\frac{1}{4.246}\right)$

$\theta \approx 76.38$

(b) $\theta \approx 76°23'$.