Day 85

14.6 Angle Identities

Negative ∠ identities

$\sin(-\theta) = -\sin\theta$

$\cos(-\theta) = \cos\theta$

$\tan(-\theta) = -\tan\theta$

Cofunction Identities

$\sin\left(\frac{\pi}{2} - \theta\right) = \cos\theta$

$\cos\left(\frac{\pi}{2} - \theta\right) = \sin\theta$

$\tan\left(\frac{\pi}{2} - \theta\right) = \cot\theta$

(ex1) Solve.

$\sin\theta = \sin\left(\frac{\pi}{2} - \theta\right)$ for $0 \leq \theta < 2\pi$

$\frac{\sin\theta}{\cos\theta} = \frac{\cos\theta}{\cos\theta}$

$\tan\theta = 1$ $\quad \frac{\pi}{4} + \pi n$

$\boxed{\theta = \frac{\pi}{4} \text{ and } \frac{5\pi}{4}}$ $\quad$ tangent $p = \pi$

(ex) $\cos\left(\frac{\pi}{2}-\theta\right) = \sin\left(\frac{\pi}{2}-\theta\right)$

$\frac{\sin\theta}{\cos\theta} = \frac{\cos\theta}{\cos\theta}$

$\tan\theta = 1$

$\boxed{\theta = \frac{\pi}{4}, \frac{5\pi}{4}}$

(ex) $\sin\left(\frac{\pi}{2}-\theta\right) = \sec\theta$ for $0 \le \theta < 2\pi$

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

$\sqrt{\cos^2\theta} = \sqrt{1}$

$\cos\theta = \pm 1$

$\theta = 0, \pi$

$\cos\theta = 1$ chart → $0, 2\pi$

$\cos\theta = -1$ chart → π

cw: p. 818 (7–14) turn in

hw: p. 830 (1–3, 8–14)