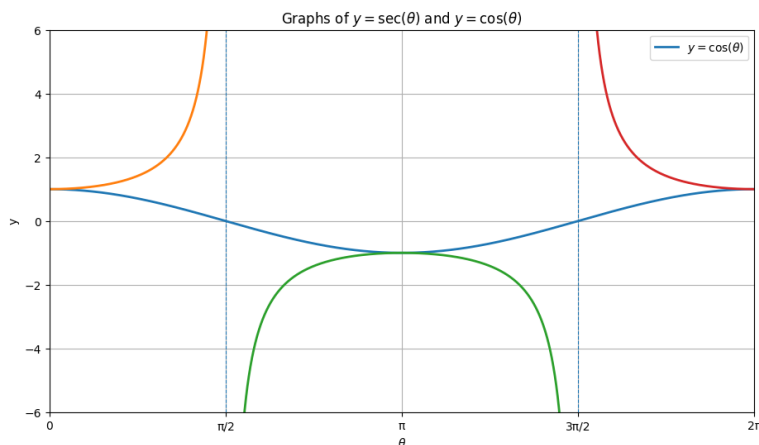
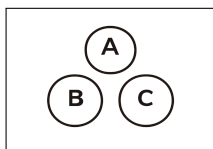


28 Formulas and Identities

Reciprocal Identities

B



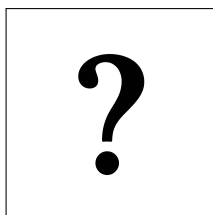
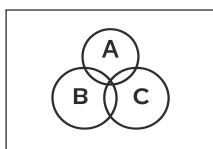
$$\sec(0) = r/r = 1 \rightarrow \cos(0) = r/r = 1$$

$$\sec(\pi/2) = r/0 = \text{undefined} \rightarrow \cos(\pi/2) = 0/r = 0$$

$$\sec(\pi) = r/(-r) = -1 \rightarrow \cos(\pi) = (-r)/r = -1$$

$$\sec(3\pi/2) = 0/r = 0 \rightarrow \cos(3\pi/2) = 0/r = 0$$

$$\sec(2\pi) = r/r = 1 \rightarrow \cos(2\pi) = r/r = 1$$



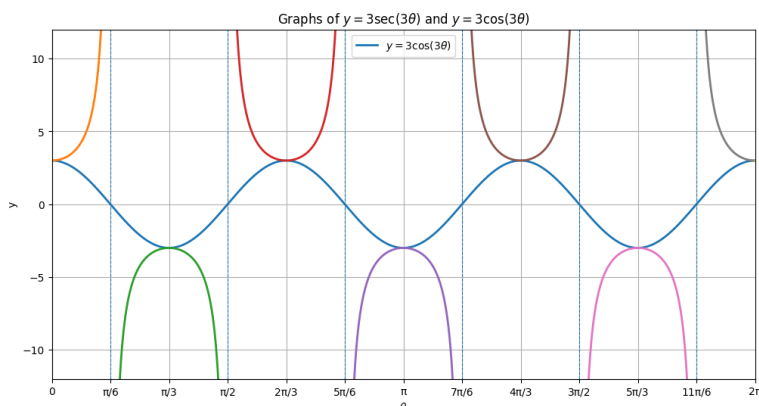
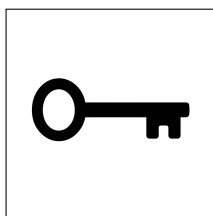
$$\csc(\theta) = r/x = 1/(x/r) = 1/\cos(\theta)$$

θ	$y = 3 \sec(3\theta)$	$y = 3 \cos(3\theta)$
0	?	?
$\pi/6$	?	?
$\pi/3$	?	?
$\pi/2$	?	?
$2\pi/3$	?	?
$5\pi/6$	?	?

28 Formulas and Identities

Reciprocal Identities

B



$$y = 3 \sec(3\theta)$$

$$\theta = 0 \rightarrow 3 \sec(3\theta) = 3 \sec(0) = 3/1 = 3$$

$$\theta = \pi/6 \rightarrow 3 \sec(3\theta) = 3 \sec(\pi/2) = \text{undefined}$$

$$\theta = \pi/3 \rightarrow 3 \sec(3\theta) = 3 \sec(\pi) = 3/-1 = -3$$

$$\theta = \pi/2 \rightarrow 3 \sec(3\theta) = 3 \sec(3\pi/2) = \text{undefined}$$

$$\theta = 2\pi/3 \rightarrow 3 \sec(3\theta) = 3 \sec(2\pi) = 3/1 = 3$$

$$\theta = 5\pi/6 \rightarrow 3 \sec(3\theta) = 3 \sec(5\pi/2) = \text{undefined}$$

$$y = 3 \cos(3\theta)$$

$$\theta = 0 \rightarrow 3 \cos(3\theta) = 3 \cos(0) = 3/1 = 3$$

$$\theta = \pi/6 \rightarrow 3 \cos(3\theta) = 3 \cos(\pi/2) = 0$$

$$\theta = \pi/3 \rightarrow 3 \cos(3\theta) = 3 \cos(\pi) = 3/-1 = -3$$

$$\theta = \pi/2 \rightarrow 3 \cos(3\theta) = 3 \cos(3\pi/2) = 0$$

$$\theta = 2\pi/3 \rightarrow 3 \cos(3\theta) = 3 \cos(2\pi) = 3/1 = 3$$

$$\theta = 5\pi/6 \rightarrow 3 \cos(3\theta) = 3 \cos(5\pi/2) = 0$$