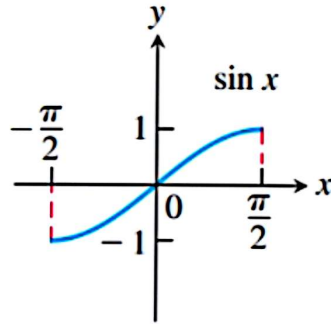
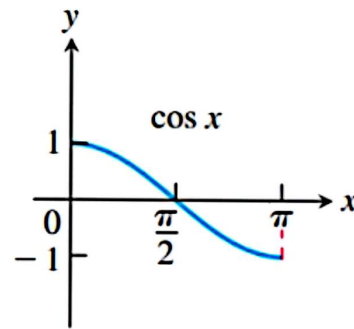


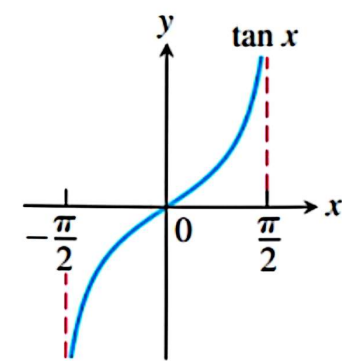
Domain restrictions that make the trigonometric functions one-to-one



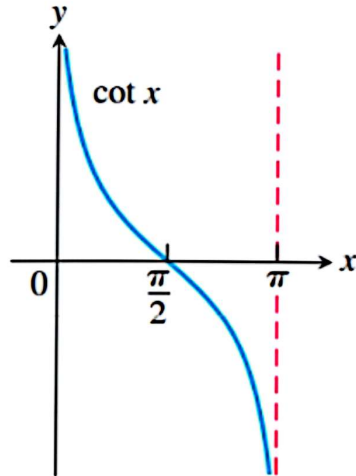
$y = \sin x$
Domain: $[-\pi/2, \pi/2]$
Range: $[-1, 1]$



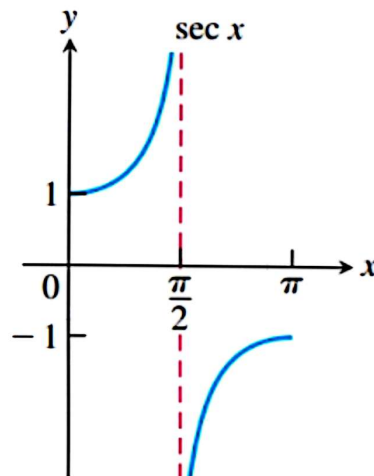
$y = \cos x$
Domain: $[0, \pi]$
Range: $[-1, 1]$



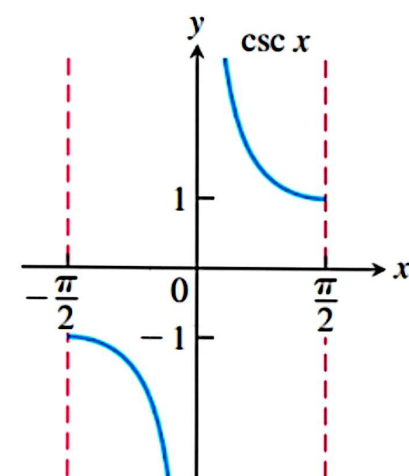
$y = \tan x$
Domain: $(-\pi/2, \pi/2)$
Range: $(-\infty, \infty)$



$y = \cot x$
Domain: $(0, \pi)$
Range: $(-\infty, \infty)$

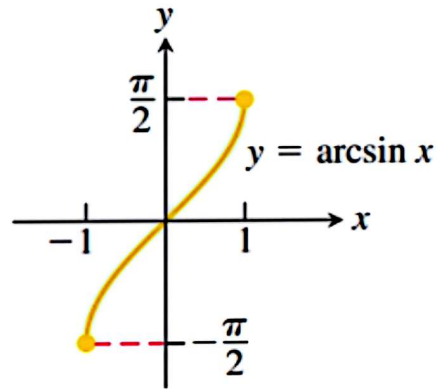


$y = \sec x$
Domain: $[0, \pi/2) \cup (\pi/2, \pi]$
Range: $(-\infty, -1] \cup [1, \infty)$



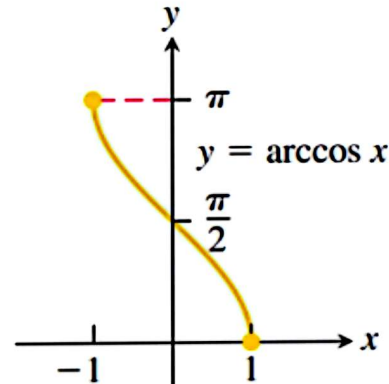
$y = \csc x$
Domain: $(-\pi/2, 0) \cup (0, \pi/2)$
Range: $(-\infty, -1] \cup [1, \infty)$

Domain: $-1 \leq x \leq 1$
 Range: $-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}$



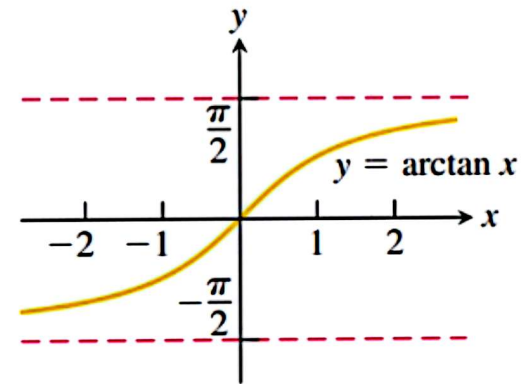
(a)

Domain: $-1 \leq x \leq 1$
 Range: $0 \leq y \leq \pi$



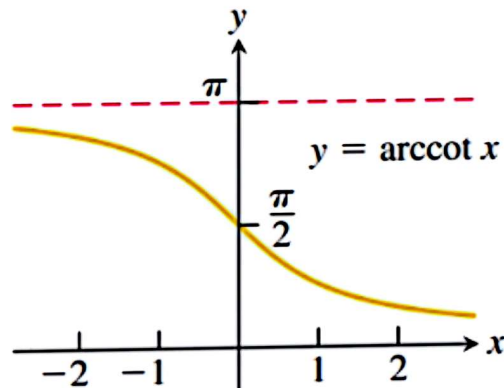
(b)

Domain: $-\infty < x < \infty$
 Range: $-\frac{\pi}{2} < y < \frac{\pi}{2}$



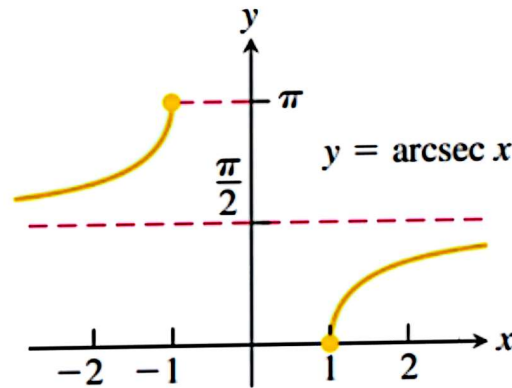
(c)

Domain: $-\infty < x < \infty$
 Range: $0 < y < \pi$



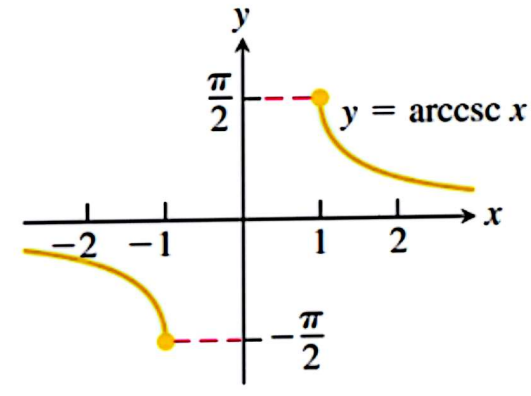
(d)

Domain: $x \leq -1$ or $x \geq 1$
 Range: $0 \leq y \leq \pi, y \neq \frac{\pi}{2}$



(e)

Domain: $x \leq -1$ or $x \geq 1$
 Range: $-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}, y \neq 0$



(f)