

$$y = \sin x$$

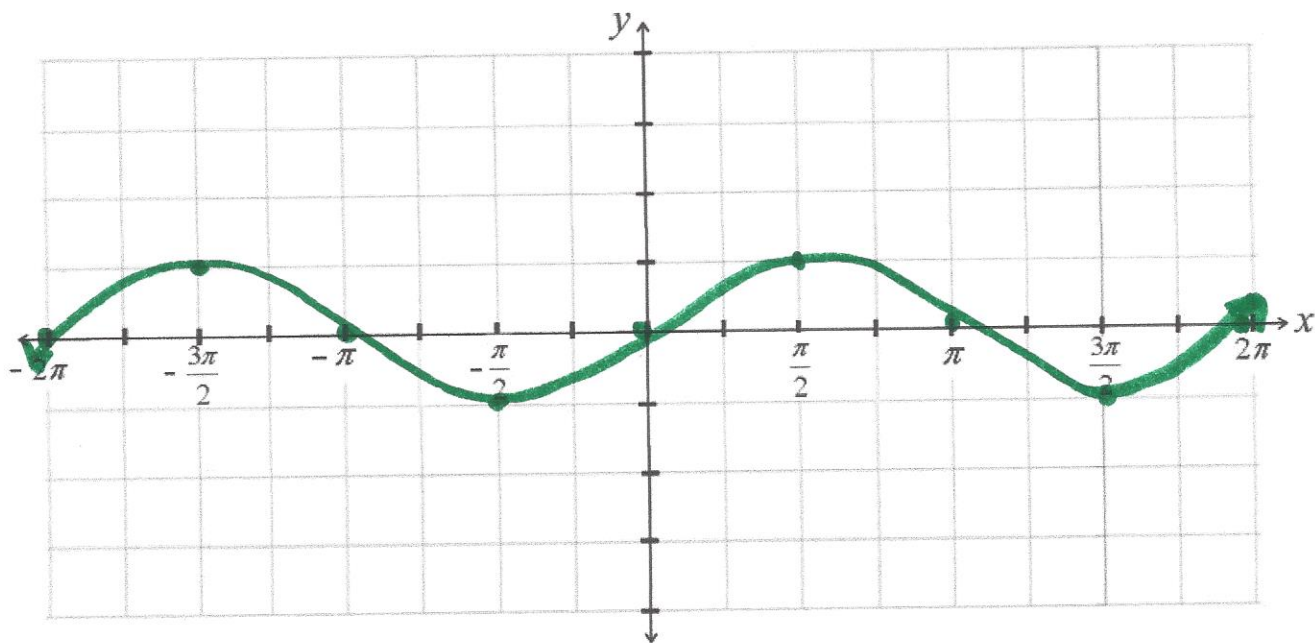
$$D: (-\infty, \infty)$$

$$R: [-1, 1]$$

$$\text{roots: } x = 0 + k\pi$$

continuous

$$\text{period: } 2\pi$$



$$y = \cos x$$

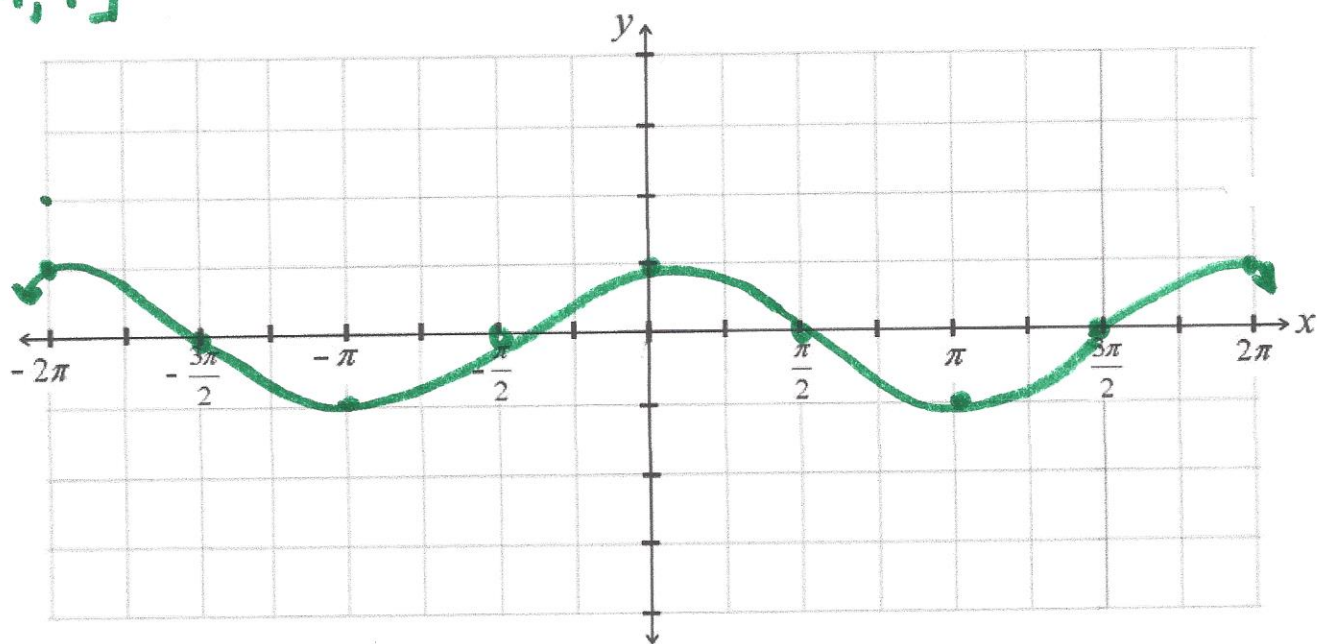
$$D: (-\infty, \infty)$$

$$R: [-1, 1]$$

$$\text{roots: } x = \frac{\pi}{2} + k\pi$$

continuous

$$\text{period: } 2\pi$$



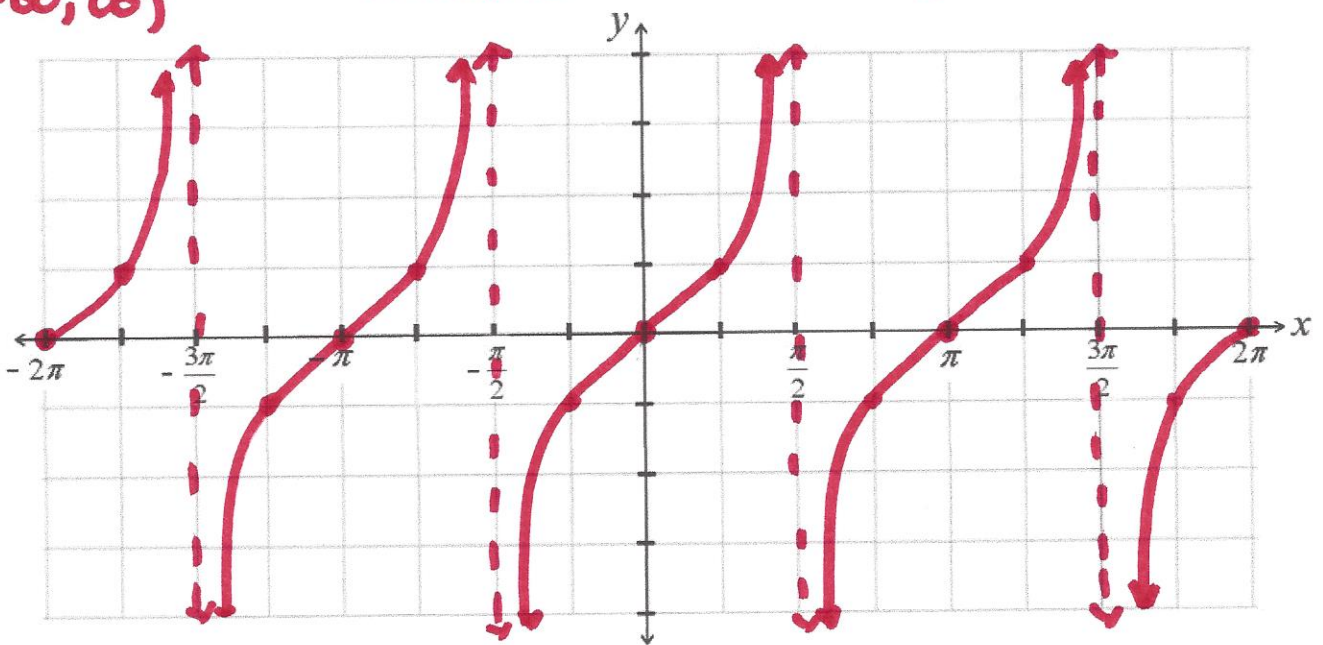
$y = \tan x$

D:  $x \neq \frac{\pi}{2} + k\pi$

R:  $(-\infty, \infty)$

roots:  $x = 0 + k\pi$   
infinite discontinuity

period:  $\pi$



$y = \csc x$

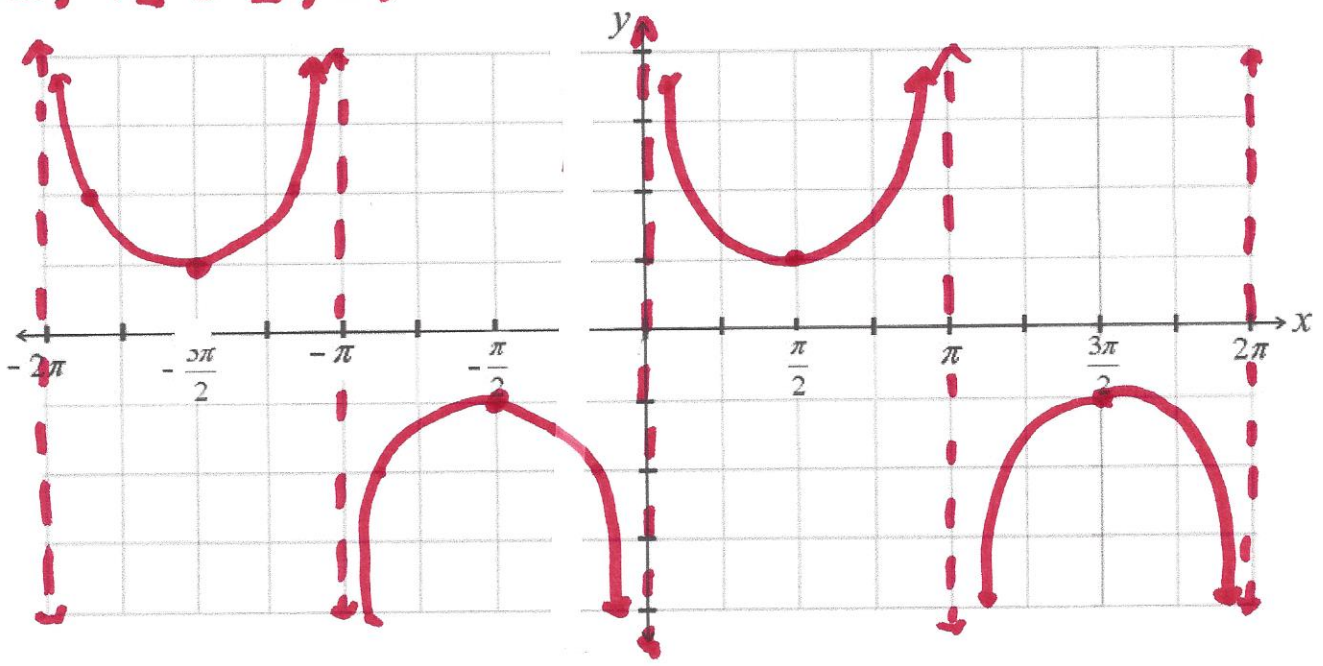
D:  $x \neq 0 + k\pi$

R:  $(-\infty, -1] \cup [1, \infty)$

roots: no real roots

infinite discontinuity

period:  $2\pi$



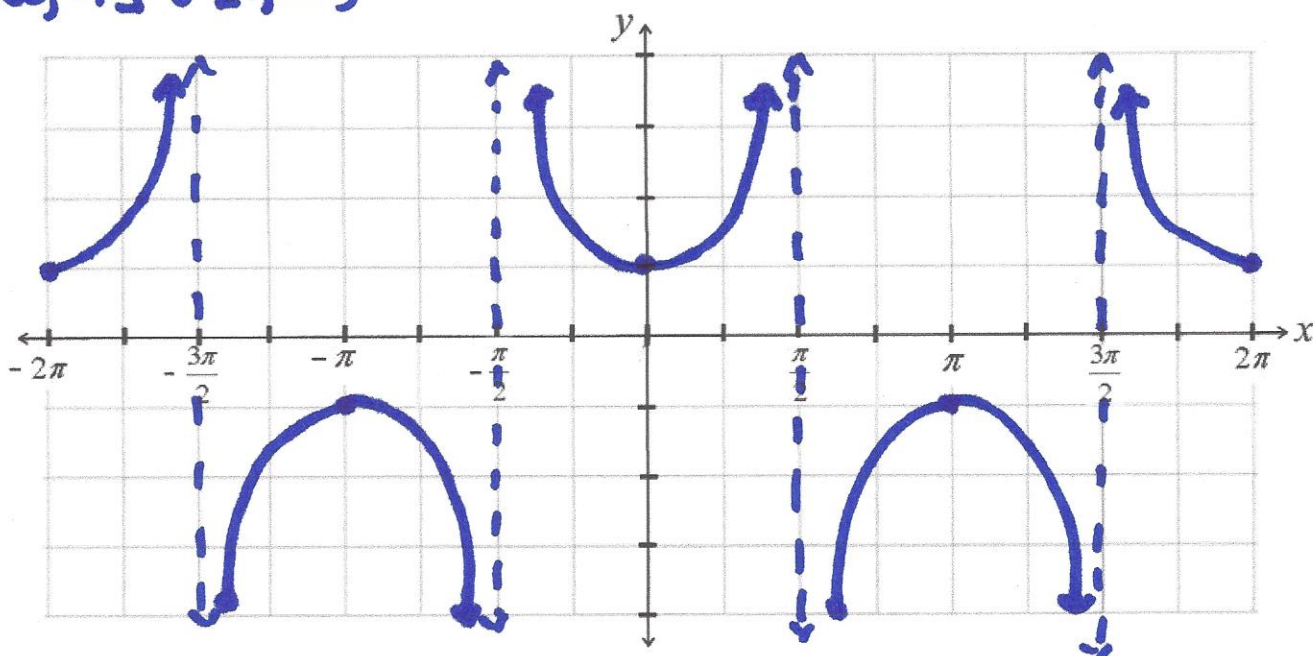
$$y = \sec x$$

$$D: x \neq \frac{\pi}{2} + k\pi$$

$$R: (-\infty, -1] \cup [1, \infty)$$

roots: no real roots  
infinite discontinuity

period:  $2\pi$



$$y = \cot x$$

$$D: x \neq 0 + k\pi$$

$$R: (-\infty, \infty)$$

roots  $x = \frac{\pi}{2} + k\pi$   
infinite discontinuity

period:  $\pi$

