

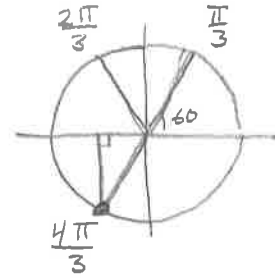
Name: Richard

January 16, 2015

1. Find the domain of the function  $f(x) = \sqrt{\frac{-1}{x}}$ . Here  $x$  needs to be negative to make  $\frac{-1}{x}$  positive. And  $x$  can't be 0, to avoid division by 0.

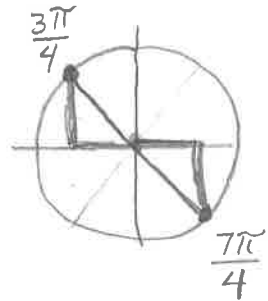
Domain:  $(-\infty, 0)$

$$2. \sec\left(\frac{4\pi}{3}\right) = \frac{1}{\cos\left(\frac{4\pi}{3}\right)} = \frac{1}{-\frac{1}{2}} = \boxed{-2}$$



3. Find all solutions of the equation  $\sin(x) + \cos(x) = 0$  that are in the interval  $[0, 2\pi]$ .

Reading straight off the unit circle, the solutions are  $x = \frac{3\pi}{4}$  and  $x = \frac{7\pi}{4}$

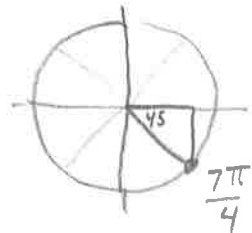
Name: Richard

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1. Find the domain of the function  $f(x) = \sqrt{\frac{1}{x^3}}$ . Note  $x$  can't be negative for then  $\frac{1}{x^3}$  is negative. Also  $x$  can't be zero, to avoid division by 0.

Domain:  $(0, \infty)$

$$2. \sec\left(\frac{7\pi}{4}\right) = \frac{1}{\cos\left(\frac{7\pi}{4}\right)} = \frac{1}{\frac{\sqrt{2}}{2}} = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{\sqrt{2}\sqrt{2}} = \boxed{\sqrt{2}}$$



3. Find all solutions of the equation  $\sin(x) - \cos(x) = 0$  that are in the interval  $[0, 2\pi]$ .

Reading straight off the unit circle, the solutions are  $x = \frac{\pi}{4}$  and  $x = \frac{5\pi}{4}$

