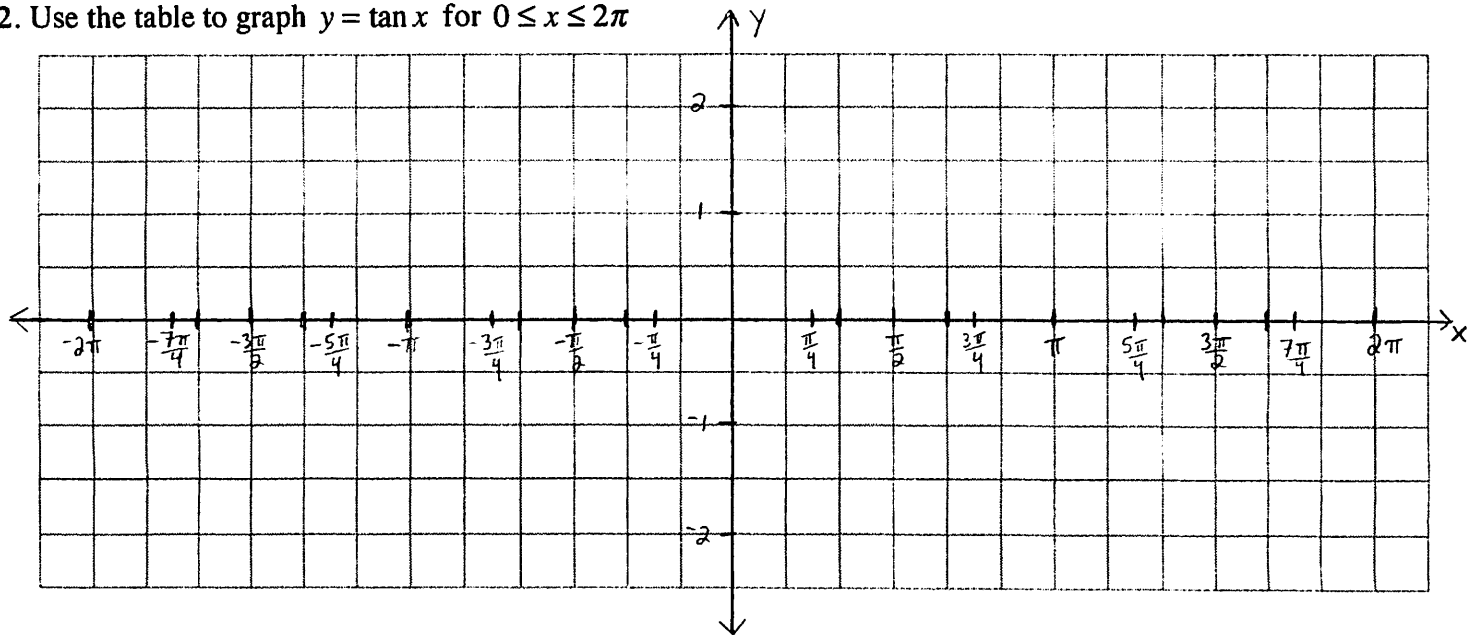


# Graphing $y = \tan x$

1. Use your calculator to fill in the missing values rounded to two decimal places.

$x$ (degrees)	$0^\circ$	$30^\circ$	$45^\circ$	$60^\circ$	$90^\circ$	$120^\circ$	$135^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$225^\circ$	$240^\circ$	$270^\circ$	$300^\circ$	$315^\circ$	$330^\circ$	$360^\circ$
$x$ (radians)	$0$	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	$\pi$	$\frac{7\pi}{6}$	$\frac{5\pi}{4}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{7\pi}{4}$	$\frac{11\pi}{6}$	$2\pi$
$y = \tan x$																	

2. Use the table to graph  $y = \tan x$  for  $0 \leq x \leq 2\pi$



3. Is  $y = \tan x$  a function?

4. Domain: \_\_\_\_\_
- Range: \_\_\_\_\_
- Amplitude: \_\_\_\_\_
- Period: \_\_\_\_\_
- Frequency: \_\_\_\_\_

5. Sketch the graphs of  $y = \tan x$  and  $y = 2 \sin \frac{1}{2}x$  in the interval  $0 \leq x \leq 2\pi$ .

For how many values of  $x$  in the interval  $0 \leq x \leq 2\pi$  does  $\tan x = 2 \sin \frac{1}{2}x$ ?



6. Which is *not* an element of the domain of  $y = \tan x$ ?

- (1)  $\pi$                       (2)  $0$                       (3)  $-\pi$                       (4)  $-\frac{\pi}{2}$