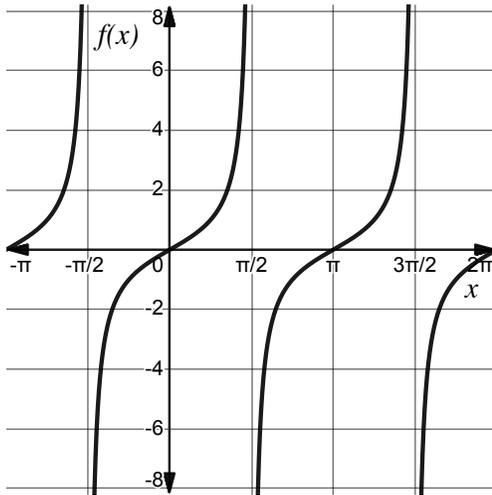


**Copy of APPC Lesson 7.1 Homework**

NAME \_\_\_\_\_

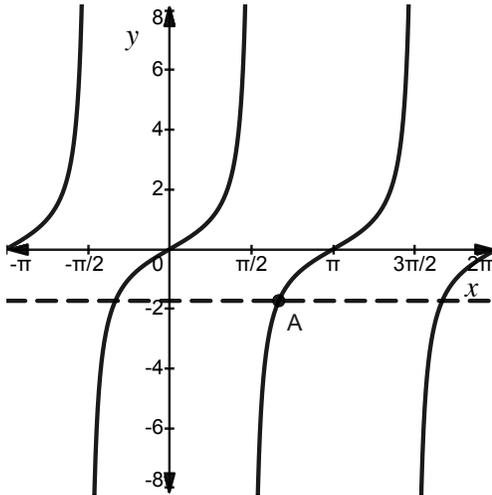
1. Let  $f(x) = \tan x$ . Evaluate each of the following.
- $f(0)$
  - $f\left(\frac{\pi}{3}\right)$
  - $f\left(\frac{7\pi}{4}\right)$
2. Which of the following points is NOT on the graph of  $y = \tan x$  ?
- $\left(\frac{3\pi}{4}, -1\right)$
  - $(\pi, 0)$
  - $\left(\frac{7\pi}{6}, \frac{\sqrt{3}}{3}\right)$
  - $\left(\frac{11\pi}{6}, -\frac{1}{2}\right)$

3. A portion of the graph of  $f(x) = \tan x$  is shown. Give two intervals on which  $f$  is increasing at a decreasing rate.



4. Explain why the domain of the tangent function is not all real numbers.

5. The graph of  $y = \tan x$  is shown. The dashed line represents  $y = -\sqrt{3}$ . Find the exact coordinates of point A.



6. The graph of  $y = \tan x$  has an  $x$ -intercept at  $x = \frac{k\pi}{2}$ . Which could be the value of  $k$ ?
- A) 30
  - B) 31
  - C)  $\frac{30}{2}$
  - D)  $\frac{33}{2}$

7. Find the period of  $y = \tan(4x) + 1$ .
8. The graph of  $y = \tan(bx)$  has vertical asymptotes at  $x = -\frac{\pi}{6}, x = \frac{\pi}{6}, x = \frac{\pi}{2}, x = \frac{5\pi}{6}, \dots$ . Find the value of  $b$ .
9. A tangent function of the form  $y = \tan(bx)$  is defined for all values in the interval  $(-2\pi, 2\pi)$ . Find a possible value of  $b$ .

10.

The graph of a function  $g$  is shown.

The equation for  $g$  can be written as  $g(x) = a \tan(b(x - c))$  for some constants  $a$ ,  $b$ , and  $c$ . Find the values of  $a$ ,  $b$ , and  $c$ .

