

### 3.8 The Tangent Function

AP Precalculus

Name: \_\_\_\_\_

**Write an equation that represents all asymptotes of the graph of  $f$  in the  $xy$ -plane.**

1.  $f(\theta) = \tan(9\theta)$

2.  $f(\theta) = \tan\left(\frac{\theta}{4}\right)$

**In the  $xy$ -plane, the angle  $\theta$  is in standard position. What is the slope of the terminal ray of the angle?**

3.  $\theta = \frac{\pi}{3}$

4.  $\theta = \frac{3\pi}{2}$

**Evaluate.**

5.  $\tan\frac{3\pi}{4}$

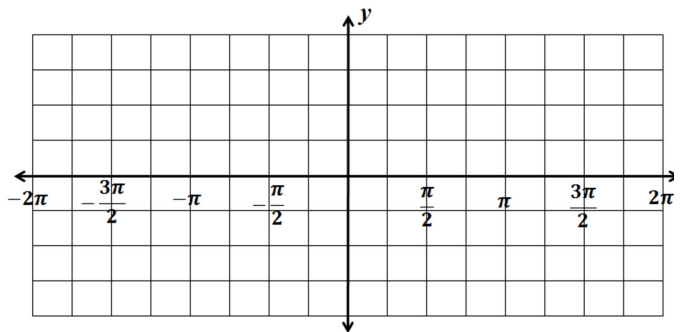
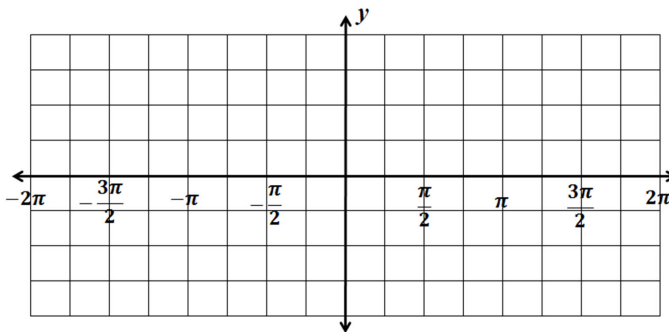
6.  $\tan\frac{5\pi}{3}$

7.  $\tan\frac{5\pi}{4}$

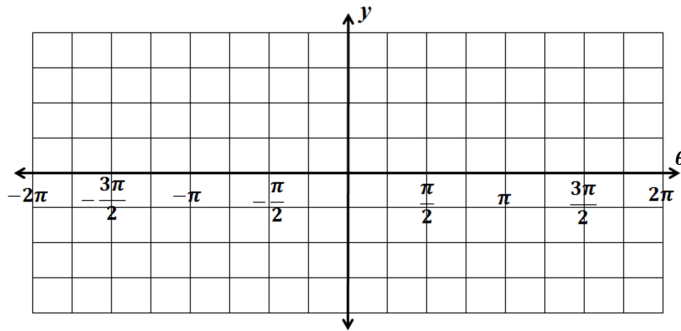
**Graph each trig function.**

8.  $y = -\tan(\theta) - 1$

9.  $y = 2 \tan\left(\frac{\theta}{2}\right) + 2$



10.  $y = 3 \tan\left(\theta + \frac{\pi}{2}\right) - 2$



Answers to 3.8 CA #2

1. $\theta = \frac{\pi}{18} + k\frac{\pi}{9}$ , for integer values of $k$ .	2. $\theta = 2\pi + k4\pi$ , for integer values of $k$ .	3. $\sqrt{3}$	4. undefined
5. -1	6. $-\sqrt{3}$	7. 1	
8.	9.	10.	