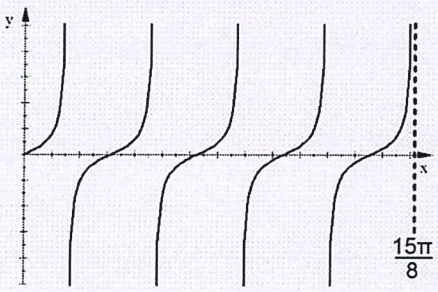
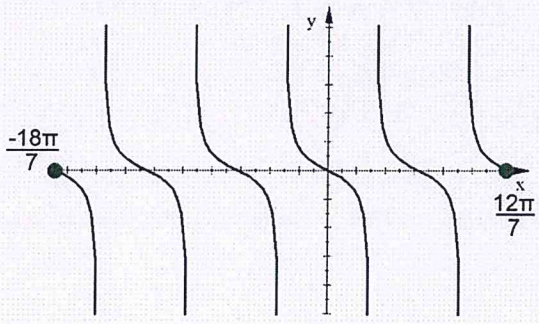
Bellwork Alg 2 Tuesday, May 7, 2019

Write the equation of each Tangent function.

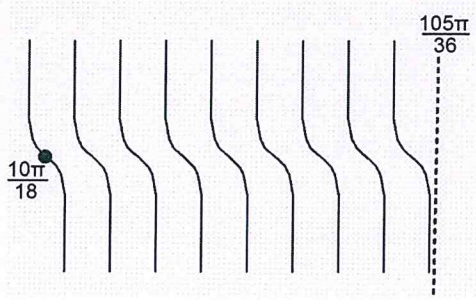
1.



2.



3.



4. State the location of 5 x-intercepts and 5 VA for the following equation: $y = \tan\frac{9x}{16}$

x-int: VA:

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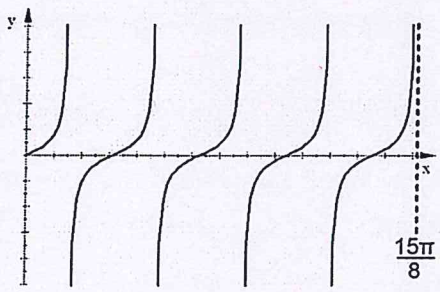
ANSWERS

Write the equation of each Tangent function.

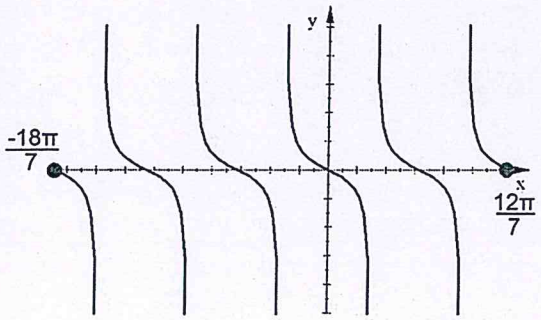
1.



- Pos Tan
- period = $\frac{15\pi}{8} \div 4\frac{1}{2}\text{ cycles} = \frac{15\pi}{8} \div \frac{9}{2} = \frac{15\pi}{8} \cdot \frac{2}{9} = \frac{5\pi}{12}$
- $b = \frac{\pi}{\frac{5\pi}{12}} = \pi \cdot \frac{12}{5\pi} = \frac{12}{5}$

$y = \text{Tan}\ \frac{12x}{5}$

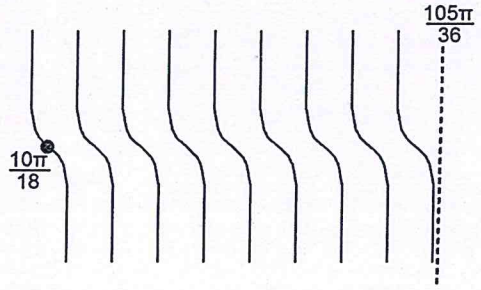
2.



- NEG TAN
- period = $\frac{\frac{12\pi}{7} - -\frac{18\pi}{7}}{5\text{ cycles}} = \frac{\frac{30\pi}{7}}{5} = \frac{30\pi}{7} \cdot \frac{1}{5} = \frac{6\pi}{7}$
- $b = \frac{\pi}{\frac{6\pi}{7}} = \pi \cdot \frac{7}{6\pi} = \frac{7}{6}$

$y = -\text{Tan}\ \frac{7x}{6}$

3.



- NEG TAN
- period = $\frac{\frac{105\pi}{36} - \frac{10\pi}{18}}{8\frac{1}{2}\text{ cycles}} = \frac{\frac{105\pi}{36} - \frac{20\pi}{36}}{\frac{17}{2}} = \frac{\frac{85\pi}{36}}{\frac{17}{2}} = \frac{85\pi}{36} \cdot \frac{2}{17} = \frac{5\pi}{18}$
- $b = \frac{\pi}{\frac{5\pi}{18}} = \pi \cdot \frac{18}{5\pi} = \frac{18}{5}$

$y = -\text{Tan}\ \frac{18x}{5}$

4. State the location of 5 x-intercepts and 5 VA for the following equation: $y = \tan\frac{9x}{16}$

x-int: $x = 0, \pm\frac{16\pi}{9}, \pm\frac{32\pi}{9}, \pm\frac{48\pi}{9}, \ldots$ VA: $x = \pm\frac{8\pi}{9}, \pm\frac{24\pi}{9}, \pm\frac{40\pi}{9}, \pm\frac{56\pi}{9}, \ldots$

$b = \frac{9}{16}$

$\text{period} = \frac{\pi}{\frac{9}{16}} = \pi \cdot \frac{16}{9} = \frac{16\pi}{9}$