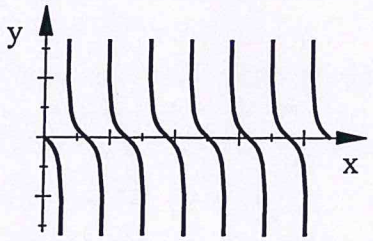
Bellwork Alg 2B Wednesday, March 21, 2018

Find the period and write the equation of each Tangent Function.

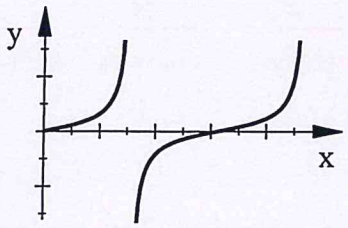
1. The window shown is 0 to $2\pi$




Period =

EQ:

2. The window shown is 0 to $5\pi$




Period =

EQ:

3. A function $f$ satisfies $f(2) = 3$ and $f(3) = 5$. A function $g$ satisfies $g(3) = 2$ and $g(5) = 6$. What is the value of $f(g(3))$?

A) 2 B) 3 C) 5 D) 6

4. A project manager estimates that a project will take $x$ hrs to compete, where $x > 100$. The goal is for the estimate to be within 10 hrs of the time it will actually take to complete the project. If the manager meets the goal and it takes $y$ hrs to complete the project, which of the following inequalities represents the relationship between the estimated time and the actual completion time?

A) $x + y < 10$ B) $y > x + 10$ C) $y < x - 10$ D) $-10 < y - x < 10$

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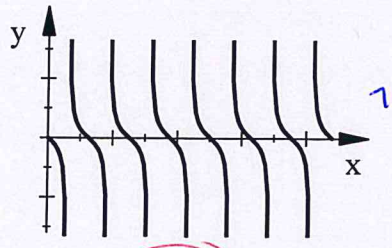
Answers

Find the period and write the equation of each Tangent Function.

1. The window shown is $0$ to $2\pi$



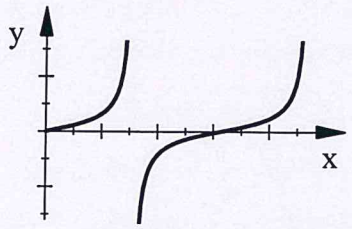

7 cycles

Period = $\frac{2\pi}{7}$

EQ: $y = -\tan\frac{7x}{2}$

$b = \frac{\pi}{\frac{2\pi}{7}} = \pi \cdot \frac{7}{2\pi} = \frac{7}{2}$

2. The window shown is $0$ to $5\pi$




1½ cycles

Period = $\frac{5\pi}{1\frac{1}{2}} = \frac{5\pi}{\frac{3}{2}} = 5\pi \cdot \frac{2}{3} = \frac{10\pi}{3}$

EQ: $y = \tan\frac{3x}{10}$

$b = \frac{\pi}{\frac{10\pi}{3}} = \pi \cdot \frac{3}{10\pi} = \frac{3}{10}$

3. A function $f$ satisfies $f(2) = 3$ and $f(3) = 5$. A function $g$ satisfies $g(3) = 2$ and $g(5) = 6$. What is the value of $f(g(3))$?

A) 2 B) 3 C) 5 D) 6

$g(3) = 2 \longrightarrow f(g(3)) = f(2) = 3$

4. A project manager estimates that a project will take $x$ hrs to compete, where $x > 100$. The goal is for the estimate to be within 10 hrs of the time it will actually take to complete the project. If the manager meets the goal and it takes $y$ hrs to complete the project, which of the following inequalities represents the relationship between the estimated time and the actual completion time?

A) $x + y < 10$ B) $y > x + 10$ C) $y < x - 10$ D) $-10 < y - x < 10$

$x$ = # hrs estimated

$y$ = actual # hrs

if $x$ is bigger: $(-1)(x - y) < (10)(-1)$ AND $y - x > -10$

if $y$ is bigger: $y - x < 10$

$-10 < y - x < 10$