© RationalReasoning 2021 Calendar Log Out Forums Gradebook Course Home > 6B(001): Intro to Functions, Part II - W2021 > Gradebook > Detail **Grade Book Detail** Martinez, Jaqueline **7.6** Started: February 19, 2021, 1:36 am Last change: February 19, 2021, 2:48 am Time spent: 72 minutes Total time questions were on-screen: 65.9 minutes. **Showing Scored Attempts** | Show Last Attempts | Show Review Attempts A Ferris wheel has a 50-foot radius and the center of the Ferris wheel is 58 feet above the ground. The Ferris wheel rotates in the CCW direction at a constant angular speed of 3 radians per minute. Chase boards the Ferris wheel at the 3-o'clock position and rides the Ferris wheel for many rotations. Let t represent the number of minutes since the ride started. a. Write an expression (in terms of t) to represent the number of radians Chase has swept out from the 3-o'clock position since the ride started. ✓ Preview b. How long does it take for Chase to complete one full revolution (rotation)? ✓ minutes | Preview (2pi)/3 c. Write an expression (in terms of t) to represent Chase's height above the center of the Ferris wheel (in feet). Preview 50sin(3t) d. Write a function f that determine's Chase's height above the ground (in feet) in terms of t. $f(t)=50\sin(3t)+58$ Preview Show Answer Show Answer Show Answer Show Answer Question 1: 4 out of 4 in 2 attempt(s) a. Consider the function $f(x) = \cos(0.75x)$. i. How much does x have to increase by for 0.75x to increase by 2π ? Preview (2pi)/0.75 ii. What is the period of f? Preview (2pi)/0.75 b. Consider the function $g(x) = \sin(3\pi x)$. i. How much does x have to increase by for $3\pi x$ to increase by 2π ? Preview (2pi)/(3pi) ii. What is the period of g? Preview (2pi)/(3pi) Show Answer Show Answer Show Answer Show Answer Question 2: 4 out of 4 in 5 attempt(s) Consider the function $f(\theta) = 3\sin(2\theta)$ where θ represents a number of radians. a. Complete the following table of values. f(heta) $\overline{4}$ $\frac{\pi}{2}$ 3π 4 b. Graph the function f below. $\pi/2$ 2π Clear All Draw: \\\ c. What is the period of f? **✓** Preview d. What is the amplitude of f? Preview Show Answer Question 3: 4 out of 4 in 4 attempt(s) Consider the function $g(\theta) = 2 \cdot \cos(\pi \theta)$. a. What is the amplitude of g? **✓** Preview b. What is the period of *g*? Preview c. Graph of the function g below. $g(\theta)$ Clear All Draw: \\\ Show Answer Show Answer Show Answer Question 4: 3 out of 3 in 5 attempt(s) The graph of a periodic function f is shown below. 1.57 3.14 4.71 a. What is the period of this function? Preview 1.57 b. What is the amplitude of this function? Preview c. Write a function formula for f. (Enter "theta" for θ .) Preview f(heta)= 3cos(4theta) Show Answer Show Answer Show Answer Question 5: 3 out of 3 in 10 attempt(s) Consider the function $f(\theta) = 4\sin(2\theta) + 1$. a. What is the amplitude of f? Preview b. What is the period of f? Preview (2pi)/2 c. Graph of the function f below. (Hint: start by thinking about what the graph of $y = 4\sin(2\theta)$ looks like.) $3\pi/2$ $\pi/2$ Clear All Draw: \\ Show Answer Show Answer Show Answer Question 6: 3 out of 3 in 30 attempt(s) Juan boards a Ferris wheel at the 3-o'clock position and rides the Ferris wheel for multiple revolutions. The Ferris wheel rotates at a constant angular speed. Let h represent Juan's height above the center of the Ferris wheel (in feet) and let t represent the number of mintues since the ride started. a. Suppose the radius of the Ferris wheel is 15 feet and the Ferris wheel rotates at 1 radian per minute. Plot the relationship between h and t for this scenario. 30 20 $3\pi/2$ $\pi/2$ Clear All Draw: \\ b. Now, suppose the radius of the Ferris wheel is 15 feet and the Ferris wheel rotates at 2 radians per minute. Plot the relationship between h and t for this scenario. 30 20 -20 Clear All Draw: c. Now, suppose the radius of the Ferris wheel is 25 feet and the Ferris wheel rotates at 2 radians per minute. Plot the relationship between h and t for this scenario. 30 Clear All Draw: \ Show Answer Show Answer Show Answer Question 7: 3 out of 3 in 17 attempt(s) A point starts at a location on the x-axis and travels CCW around a circle that is centered at (0,0) at a constant angular speed. The function $f(t) = 22 \cdot \sin(7t)$ gives the point's y-coordinate in terms of the number of seconds t since the point started moving. For each quantity below, determine which expression represents that quantity's value. a The amplitude of the graph of <math> f.a. 22 b. 7 \circ The period of the graph of f. c How long it takes the point to complete one full lap around the circle. d. $\sin(7t)$ e. 7*t* a The radius of the circle that the point moves along. Show Answer Question 8: 1 out of 1 in 17 attempt(s) a. Suppose $f(x) = 6\sin(4x)$. What is the period of f? Preview (2pi)/4 b. Suppose $g(x) = 6\sin(4x) + 4$. What is the period of g? Preview (2pi)/4 c. Suppose $h(x) = -6\sin(4x)$. What is the period of h? **✓** Preview (2pi)/4 Show Answer Show Answer Show Answer Question 9: 3 out of 3 in 1 attempt(s) Total: 28/28

Categorized Score Breakdown

28 / 28 (100 %)

Category Points Earned / Possible (Percent)