

Unit 1: Functions - Assessment

Name Answer Key PER _____ DATE _____

FIFA1	FIFA2	AREID10	FIFC7	FIFB5

Computation

4	3	2	1
Response has no recall errors, <i>minimal</i> procedural errors* and no conceptual errors**	Response has no recall errors, <i>minimal</i> procedural errors and <i>minimal</i> conceptual errors	Response has no recall errors, but has several procedural errors <u>OR</u> several conceptual errors	Recall errors exist <u>OR</u> Steps taken are not related to problem <u>OR</u> Response left blank

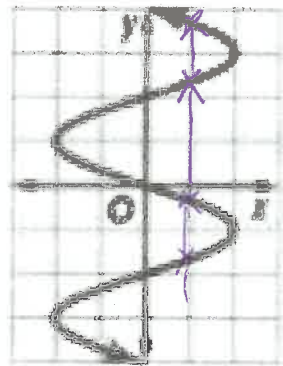
Written Responses

4	3	2	1
Response is written in a complete sentence and uses appropriate academic vocab	Response is written in a complete sentence, and minimal errors exist in use of academic vocab	Response is not written in a complete sentence <u>OR</u> no academic vocab	Concept of response is not related to problem <u>OR</u> Response is left blank

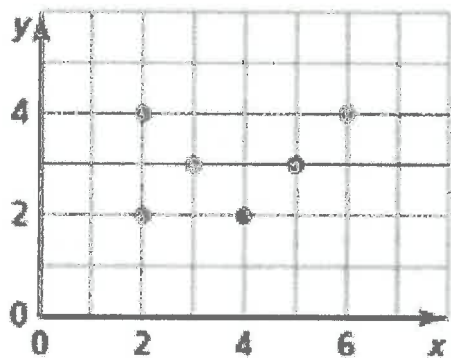
Procedural errors** are mistakes made in the math*Conceptual errors** are mistakes made in the steps one take

BOX YOUR ANSWERS!!!

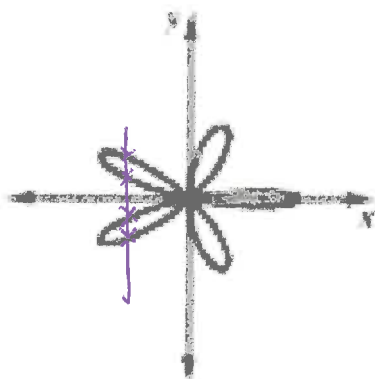
1. **(FIFA1)** Three relations are shown below. Determine which of these relations are functions. Justify why it is a function and why it is not a function in the space provide.



This is not a function
 Since several inputs
 have more than one
 output.



This is not a function
 since the input $x=2$
 has two outputs,
 $y=2$ and 4 .



This is not a function
 since several inputs
 have more than one
 output.

2. FIFA2) Calculate $f(4)$ for each function listed below. Show your work and box your answers.

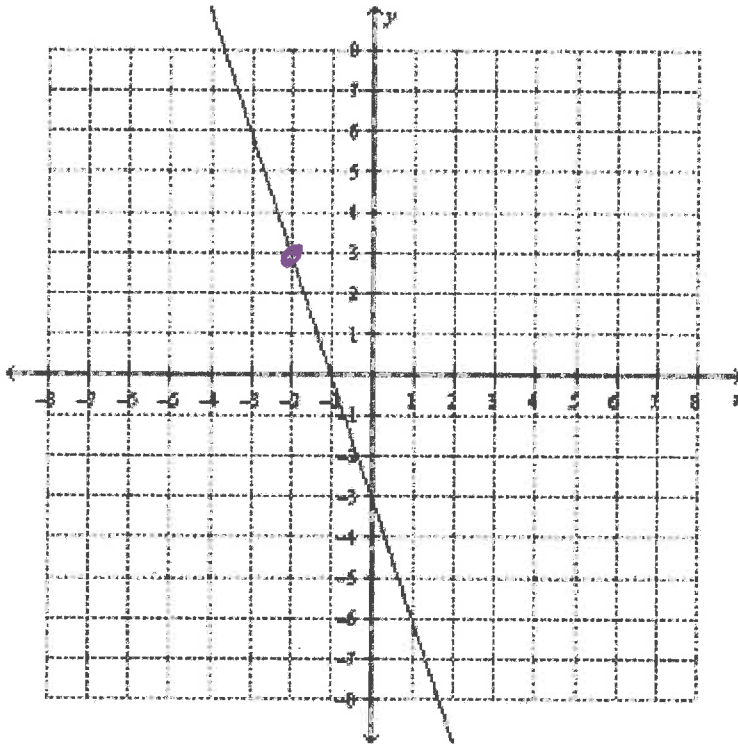
a. $f(x) = \left(\frac{1}{5}\right)^x$ a.) $f(4) = \left(\frac{1}{5}\right)^4 = \frac{1}{5} \cdot \frac{1}{5} \cdot \frac{1}{5} \cdot \frac{1}{5} = \frac{1}{625}$

b. $f(x) = 3x - 12$ $f(4) = \frac{1}{625}$

c. $f(x) = (x - 2)^3 - 6$ b.) $f(4) = 3(4) - 12 = 12 - 12 = 0$
 $f(4) = 0$

c.) $f(4) = (4 - 2)^3 - 6$
 $f(4) = 2^3 - 6$
 $f(4) = 8 - 6$
 $f(4) = 2$

3. (AREID10) Which choice is the correct equation for the line graphed below?
Justify why you chose the graph in the space below.



A. $y = 3x + 3$ $3(-2) + 3 =$
 $-6 + 3 = -3$

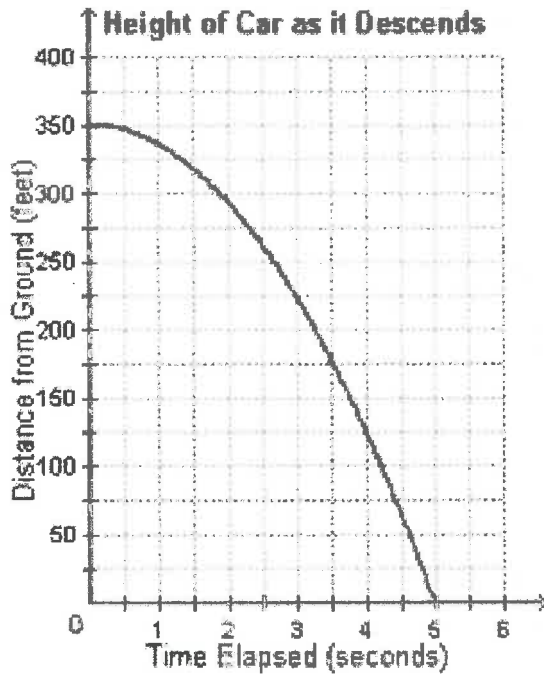
B. $y = -3x - 2$ $-3(-2) - 2 =$
 $6 - 2 = 4$

C. $y = 3x - 3$ $3(-2) - 3 =$
 $-6 - 3 = -9$

D. $y = -3x - 3$ $-3(-2) - 3 =$
 $6 - 3 = 3$

The equation $y = -3x - 3$ (D) matches the graph since when I evaluated each function for the input $x = -2$, D. is the only function that yielded an output of $y = 3$.

4. (FIFC7) Gianni is in a car at the top of a roller coaster ride. The distance, d , in feet, of the car from the ground as the car descends is determined by the equation $d = 192 - 12t^2$, where t is the number of seconds it takes the car to travel down to each point of the ride.



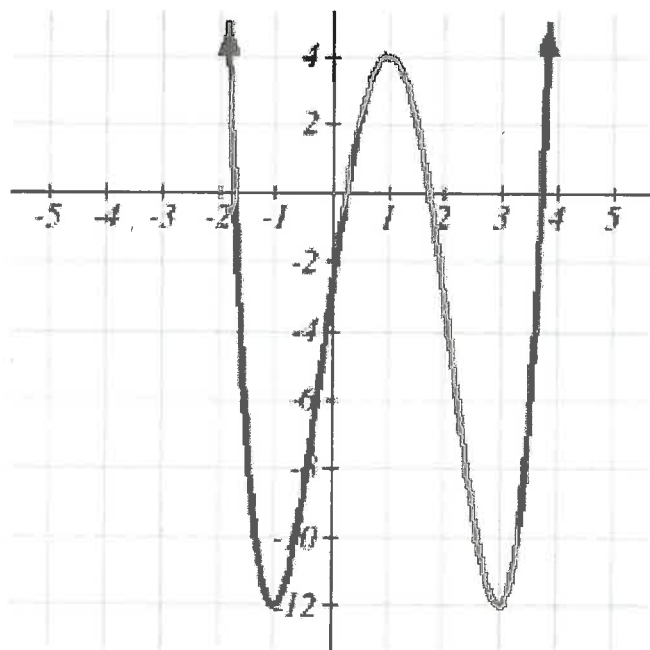
a. What is the car's greatest height, according to the graph?

According to the graph, the car's greatest height is 350 ft.

b. How many seconds will it take Gianni to reach the ground?

It will take Gianni 5 sec to reach the ground.

5. (FIFB5) What is the domain and range of the function shown below?



$$\text{Domain: } -\infty < x < \infty$$

$$\text{Range: } -12 \leq y < \infty$$