

Name:

Answers!

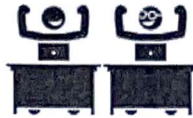
Class:



Communication



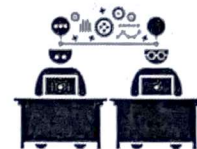
Successful Partnership



Encouragement



Solving Problem Together



Collaboration

Question 01

Jada saw a music video that her favorite artist recently posted online. The equation  $v(t) = 320 \cdot 4^t$  represents the number of views  $v$  of the video,  $t$  days since Jada saw the video.

a. Find  $v(-2)$ .

$$v(-2) = 320 \cdot 4^{-2} = 20$$

b. What does  $v(-2)$  represent in this situation?

$v(-2)$  is the number of people who saw the video 2 days before Jada saw the video.

Question 02

A marine biologist estimates that a structure of coral has a volume of 1,200 cubic centimeters and that its volume doubles each year.



1. Write an equation of the form  $y = a \cdot b^t$  representing the relationship, where  $t$  is time in years since the coral was measured and  $y$  is volume of coral in cubic centimeters. (You need to figure out what numbers  $a$  and  $b$  are in this situation.)
2. Find the volume of the coral when  $t$  is 5, 1, 0, -1, and -2.
3. What does it mean, in this situation, when  $t$  is -2?  $\rightarrow$  2 years before coral was measured
4. In a certain year, the volume of the coral is 37.5 cubic centimeters. Which year is this? Explain your reasoning.

$$y = 1200(2)^t$$

$$f(5) = 1200(2)^5 = 38,400$$

$$f(1) = 1200(2)^1 = 2,400$$

$$f(0) = 1200(2)^0 = 1,200$$

$$f(-1) = 1200(2)^{-1} = 600$$

$$f(-2) = 1200(2)^{-2} = 300$$

$$f(-5) = 1200(2)^{-5} = 37.5$$

five years before coral was measured