Unit 5 Lesson 13: Reasoning about Exponential Graphs (Part 2)

1 Which One Doesn't Belong: Four Functions (Warm up)

Student Task Statement

Which one doesn't belong?

$f(n) = 8 \cdot 2^n$

$g(n) = 2 \cdot 8^n$

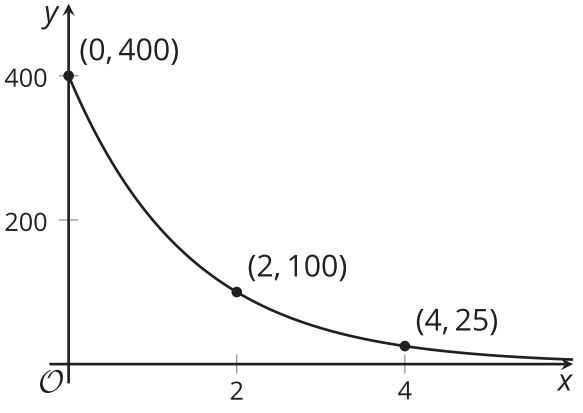
$h(n) = 8 + 2n$

$j(n) = 8 \cdot \left(\frac{1}{2}\right)^n$

2 Value of A Computer

Student Task Statement

1. Here is a graph representing an exponential function f. The function f gives the value of a computer, in dollars, as a function of time, x, measured in years since the time of purchase.



Based on the graph, what can you say about the following?

a. The purchase price of the computer

b. The value of f when x is 1

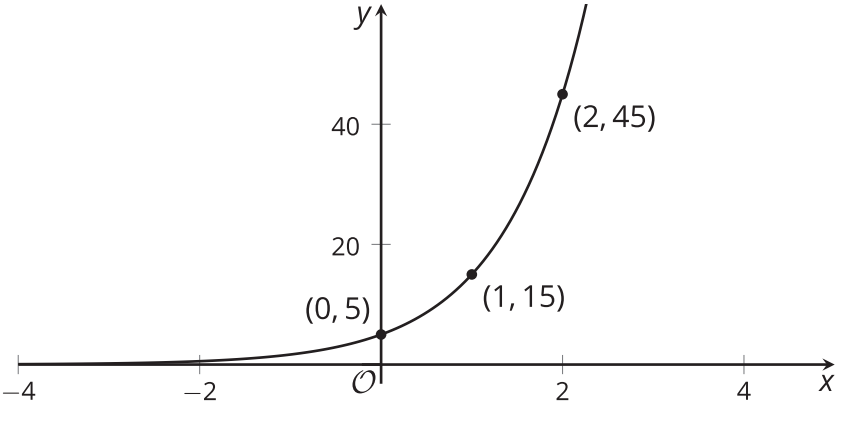
c. The meaning of $f(1)$

d. How the value of the computer is changing each year

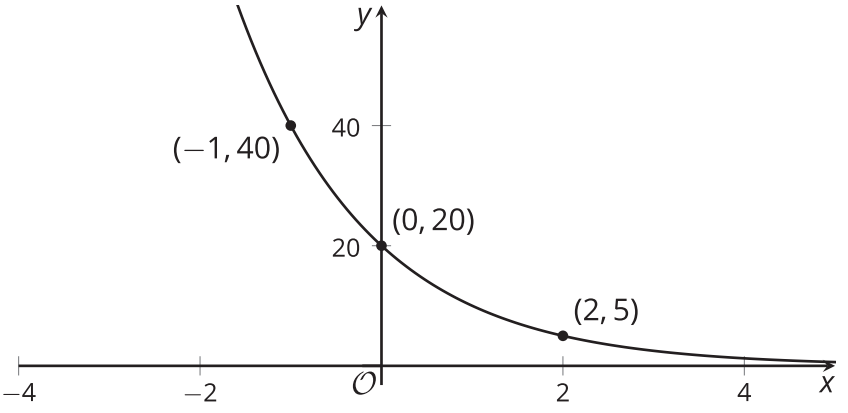
e. An equation that defines f

f. Whether the value of f will reach 0 after 10 years

2. Here are graphs of two exponential functions. For each, write an equation that defines the function and find the value of the function when x is 5.



a.

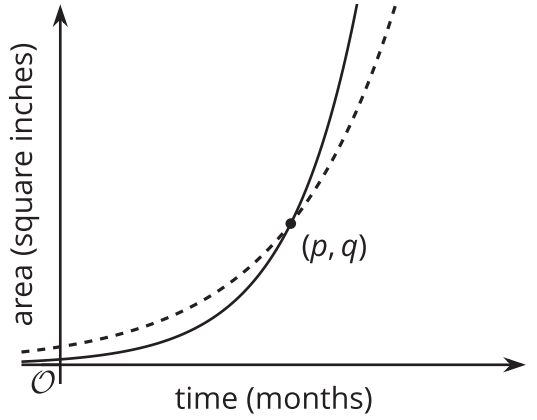


b.

3 Moldy Wall

Student Task Statement

Here are graphs representing two functions, and descriptions of two functions.



- Function f: The area of a wall that is covered by Mold A, in square inches, doubling every month.
- Function g: The area of a wall that is covered by Mold B, in square inches, tripling every month.

1. Which graph represents each function? Label the graphs accordingly and explain your reasoning.
2. When the mold was first spotted and measured, was there more of Mold A or Mold B? Explain how you know.
3. What does the point (p, q) tell us in this situation?

Images for Activity Synthesis