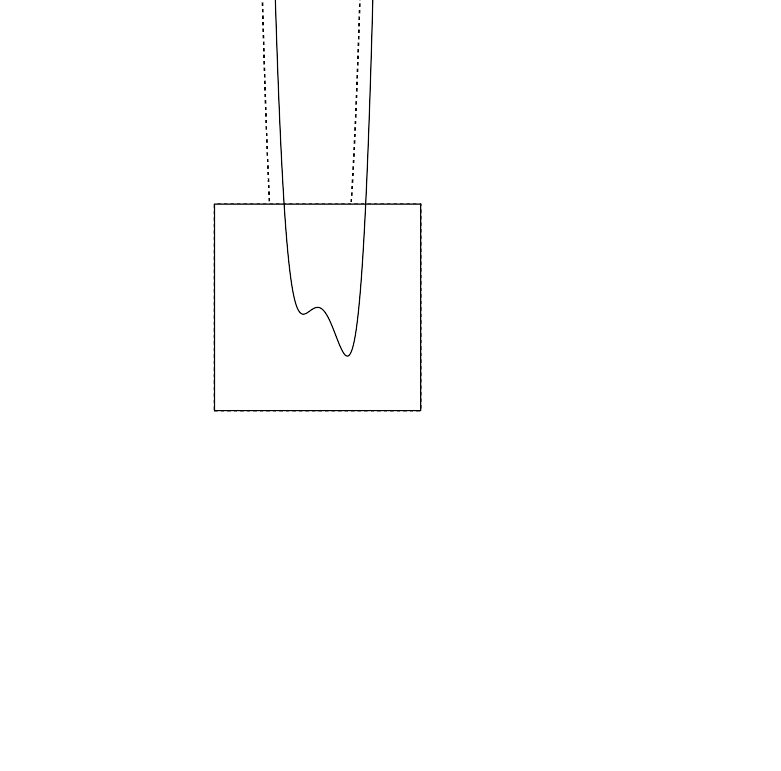
### Lesson 4 Practice Problems

1. The dashed function is the graph of and the solid function is the graph of . Express in terms of .

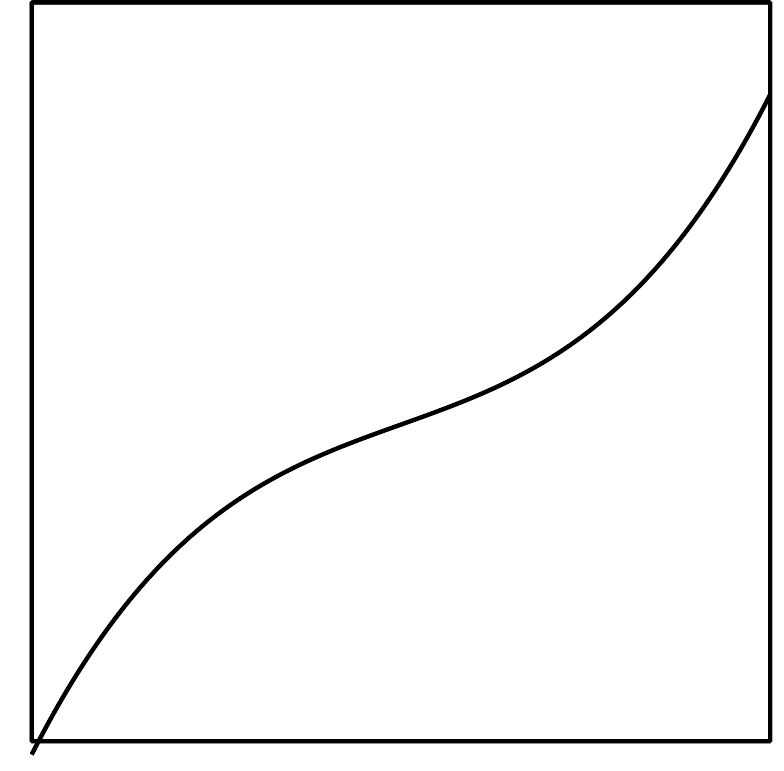
* 

1. The table gives some values of functions and .

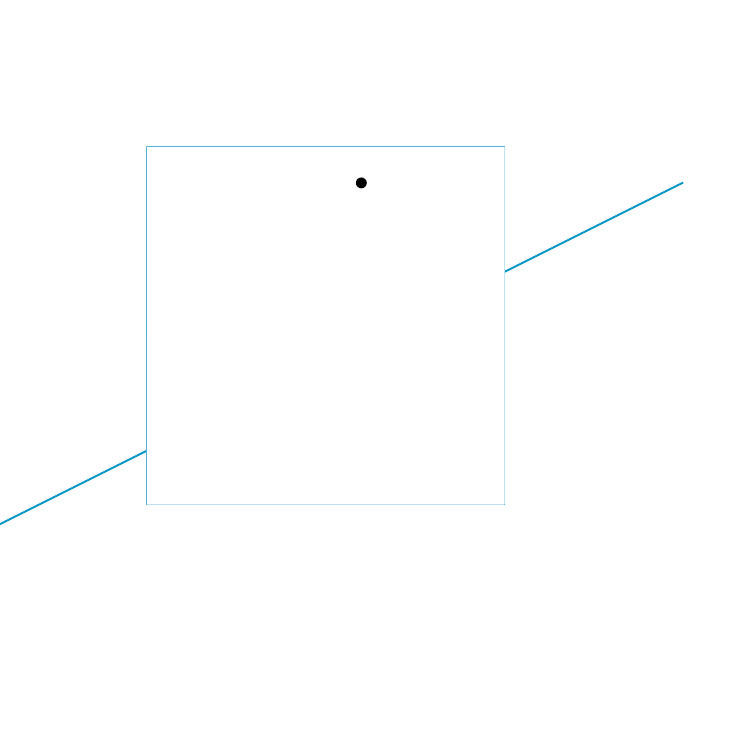
* Which of these equations could be true for all values of ?

|  |  |  |
| --- | --- | --- |
|  |  |  |
| * -2 | * 4 |  |
| * -1 | * 2 |  |
| * 0 | * 1 | * 1 |
| * 1 |  | * 2 |
| * 2 |  | * 4 |

1. Here is the graph of a function .

* 
  1. On the same axis, sketch a graph of reflected over the -axis and then translate it 3 units up.
  2. Write an equation (in terms of ) for a function that has the graph that you drew.

1. Describe a transformation of the line that contains the two labelled points.

* 
* (From Unit 5, Lesson 1.)

1. The thermostat in an apartment is set to  while the owner is awake and to  while the owner is sleeping. The function gives the temperature , in degrees Fahrenheit, in the apartment hours after midnight. When it is hot outside, the owner changes the settings to be exactly 10 degrees warmer than to save energy. The function gives the temperature , in degrees Fahrenheit, hours after midnight when it is hot outside.
   1. If , then what is the corresponding point on ? Use function notation to describe the point on .
   2. If , then what is the corresponding point on ? Use function notation to describe the point on .
   3. Write an expression for in terms of .

* (From Unit 5, Lesson 2.)

1. A ball is hit in the air. Its height , in feet, seconds after it is hit is modeled by the equation . Which equation models the height of a ball following the same path but is hit 2 seconds *after* the first ball?

* (From Unit 5, Lesson 3.)



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