### Lesson 18 Practice Problems

1. There are many cylinders with a height of 18 meters. Let represent the radius in meters and represent the volume in cubic meters.
   1. Write an equation that represents the volume as a function of the radius .
   2. Complete this table, giving three possible examples.

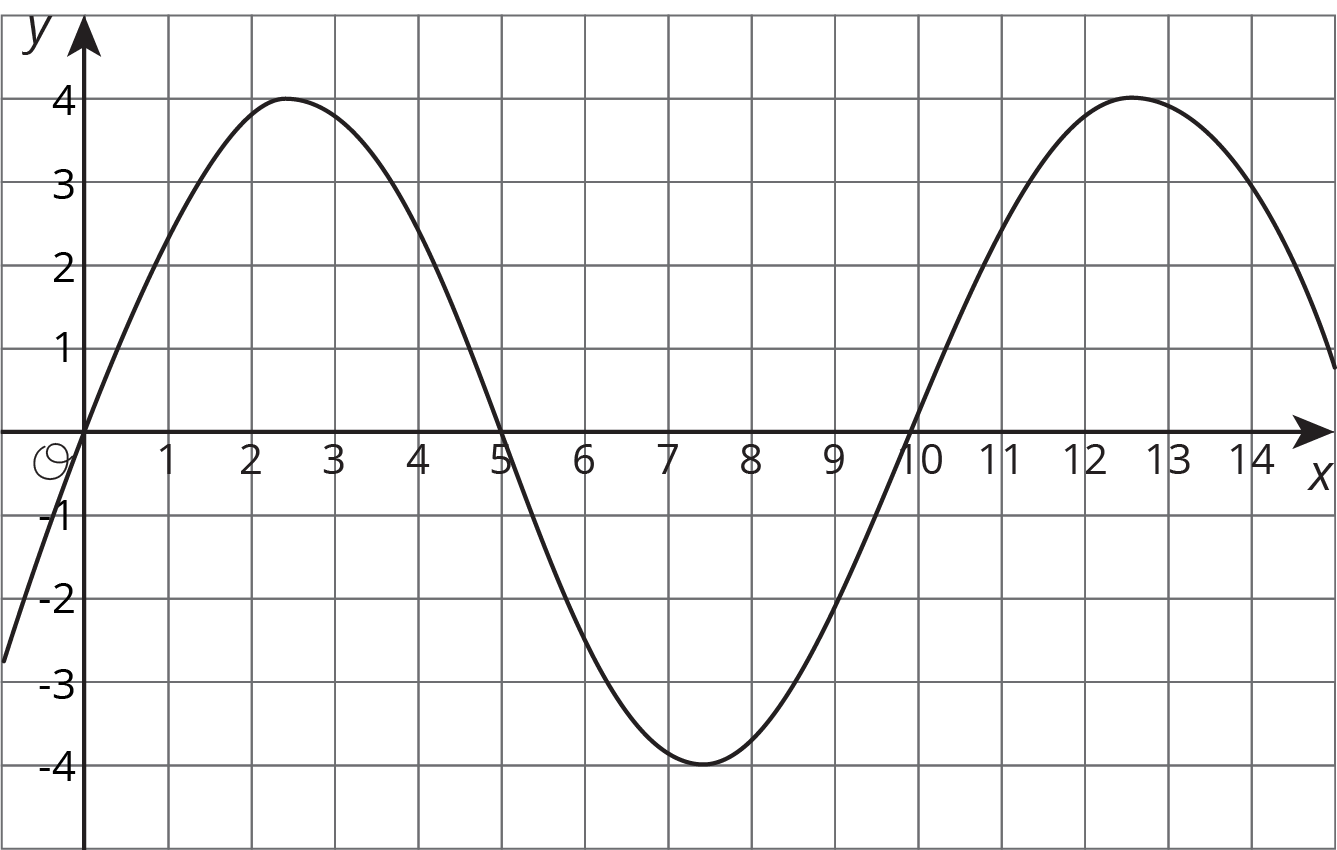
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| * + 1 |  |
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* 1. If the radius of a cylinder is doubled, does the volume double? Explain how you know.
  2. Is the graph of this function a line? Explain how you know.

1. As part of a competition, Diego must spin around in a circle 6 times and then run to a tree. The time he spends on each spin is represented by and the time he spends running is . He gets to the tree 21 seconds after he starts spinning.
   1. Write an equation showing the relationship between and .
   2. Rearrange the equation so that it shows as a function of .
   3. If it takes Diego 1.2 seconds to spin around each time, how many seconds did he spend running?

* (From Unit 5, Lesson 3.)

1. The table and graph represent two functions. Use the table and graph to answer the questions.

* 

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | * 1 | * 2 | * 3 | * 4 | * 5 | * 6 |
|  | * 3 | * -1 | * 0 | * 4 | * 5 | * -1 |

* 1. For which values of is the output from the table less than the output from the graph?
  2. In the graphed function, which values of give an output of 0?
* (From Unit 5, Lesson 7.)

1. A cone has a radius of 3 units and a height of 4 units.
   1. What is this volume of this cone?
   2. Another cone has quadruple the radius, and the same height. How many times larger is the new cone’s volume?



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