### Lesson 18 Practice Problems

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

| * + $r$
 | * + $V$
 |
| --- | --- |
| * + 1
 |  |
|  |  |
|  |  |

* 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 $s$ and the time he spends running is $r$. He gets to the tree 21 seconds after he starts spinning.
	1. Write an equation showing the relationship between $s$ and $r$.
	2. Rearrange the equation so that it shows $r$ as a function of $s$.
	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.
* 

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| * $x$
 | * 1
 | * 2
 | * 3
 | * 4
 | * 5
 | * 6
 |
| * $y$
 | * 3
 | * -1
 | * 0
 | * 4
 | * 5
 | * -1
 |

* 1. For which values of $x$ is the output from the table less than the output from the graph?
	2. In the graphed function, which values of $x$ 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?



© CC BY Open Up Resources. Adaptations CC BY IM.