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Graphing a Rule Function

Unit 4 Lesson 4

GRAPHING A FUNCTION RULE

Students will be able to:

Represent a function rule using graphs and identify whether the graph is discrete or continuous

Key Vocabulary:

- Function Rule
- Graphing Function Rule
- Discrete Graph
- Continuous Graph

Function Rule

A function rule is a mathematical rule that can be used to describe the general trend of the function. A rule can be taken as an **equation** representing any relationship.

A function Rule can be used to interpret the function as a graph.

How to graph a function rule?

If we are given a function rule, we can make a table of values satisfying the function rule and graph these points to discover the shape of the function. Here we will cover two types of function graphs:

- Linear Function Graphs
- Nonlinear Function Graphs

Problem 1: What is the graph of the function rule $y = 2x + 1$?

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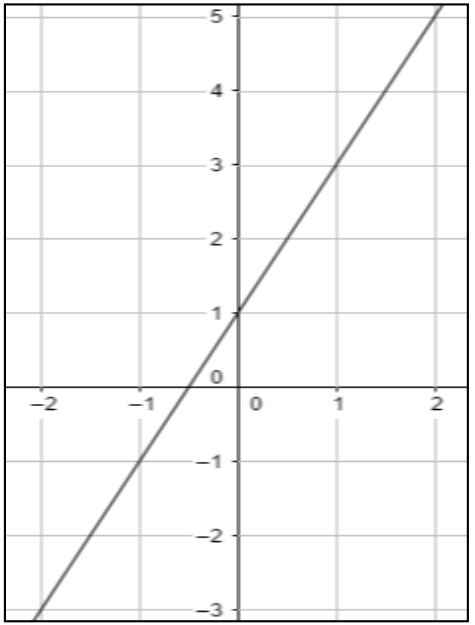
Table

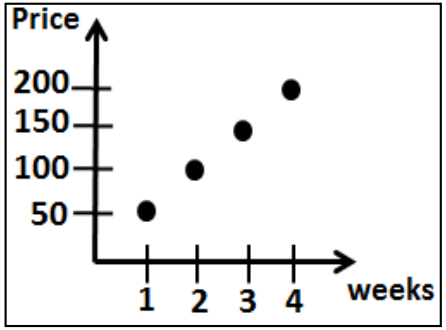
x	$y = 2x + 1$	(x,y)
-2	-3	(-2,-3)
-1	0	(-1,0)
0	1	(0,1)
1	3	(1,3)
2	5	(2,5)



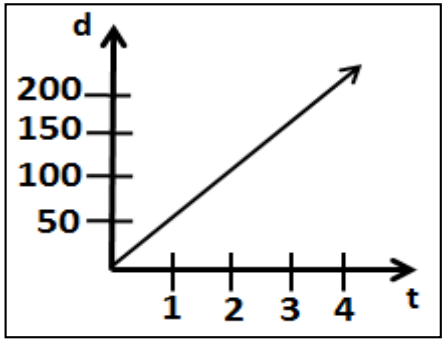
Graph

Discrete and Continuous Graphs

- A **discrete graph** is composed of distinct isolated points on the graph.



- A **continuous graph** is a graph that is unbroken and data exists between plotted values.



Problem 2: John buys eggs at the supermarket. The function representing the cost per carton of eggs is $c = 1.5n + 1$ where c is the cost of the carton of eggs and n is the number of cartons. Graph the function and tell whether the function is continuous or discrete?

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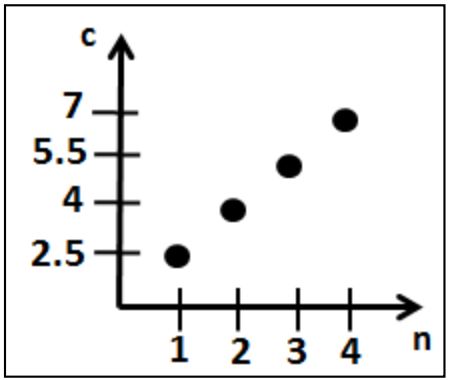
Table

n	$c = 1.5n + 1$	(n,c)
1	2.5	(1,2.5)
2	4	(2,4)
3	5.5	(3,5.5)
4	7	(4,7)



The graph is discrete

The graph is discrete, so the function is a discrete function.