Edgenuity®

Warm-Up | Writing and Graphing Equations in Two Variables

? Lesson Question

⊙ Lesson Goals

Explore real-world linear [____] and graphs.

Graph a linear equation that [____] a real-world scenario.

Write a linear equation that models a real-world scenario.

Interpret linear [____] and consider constraints of real-world scenarios.
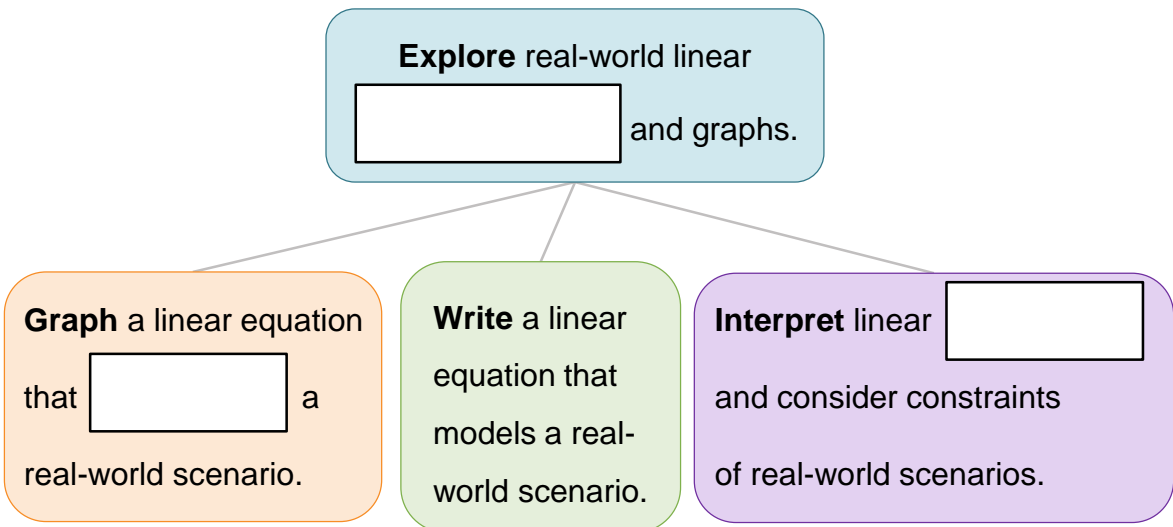
W2K Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

assume	to accept as true without [____]
viable	[____] of working successfully; practical, realistic, usable, [____]
continuous graph	a graph in the coordinate plane made up of [____] lines or curves with no breaks

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Words to Know

|	
coordinate plane	a system for locating points in two dimensions that uses a horizontal [ ] and a vertical axis.
discrete graph	a graph that has a [ ] number of data points
ordered pair	the pair of numbers, given in a specific [ ] , used to locate a [ ] a coordinate plane

Plotting Points in the Coordinate Plane

Graph the **ordered pairs** on the **coordinate plane**.

Plot a point for each ordered pair.
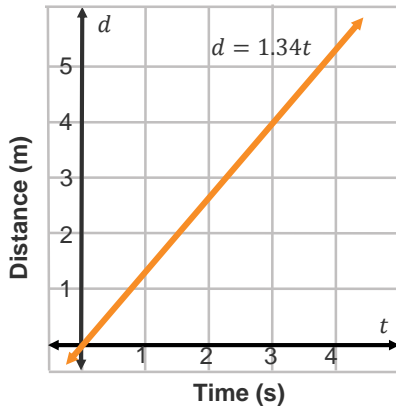
- (5, 2)
- (−4, −1)
- (0, −3)
- (−2, 0)
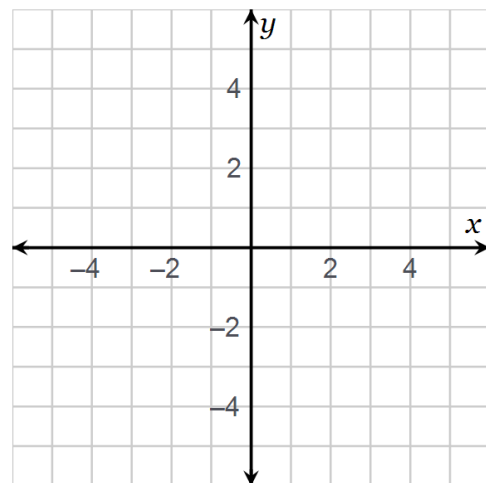
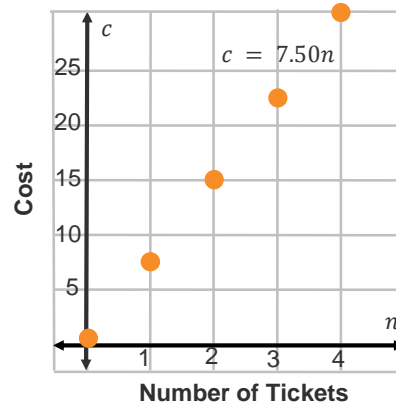# Instruction | Writing and Graphing Equations in Two Variables

Slide 2

Continuous vs. Discrete Graphs

Continuous graphs are made up of [ ] points on a given interval forming connected lines or curves with no [ ].

[ ] **graphs** have a [ ] and isolated number of data points.

Time and distance can be fractional.

The number of tickets must be a whole number.

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Graphing a Linear Equation That Models a Real-World Scenario

The equation $w = 8.34g$ describes the relationship between the volume and weight of water, where w is the weight in pounds and g is the number of gallons. Graph the equation. What solutions are viable?

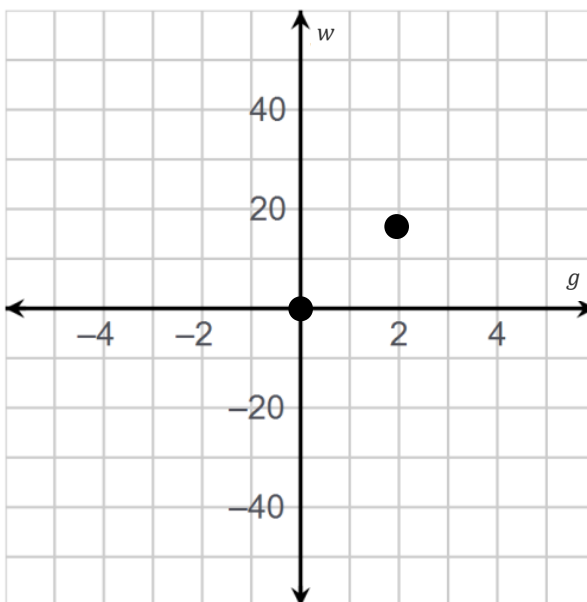| Gallons (g)	Weight (w)
–2	not viable
0	0
2	
4	33.36

Plot the point (4, 33.36). Then, connect the points on the graph with a ray.

Slide 6

Graphing a Linear Equation That Models a Real-World Scenario

Emma's cell phone plan charges \$10 per month for text messaging service plus an additional \$0.10 per sent text. The equation $c = 10 + 0.10t$ models the cost of Emma's plan, c, depending on the number of texts, t, she sends. Graph the equation. What solutions are viable?

t	c
0	
10	
20	12
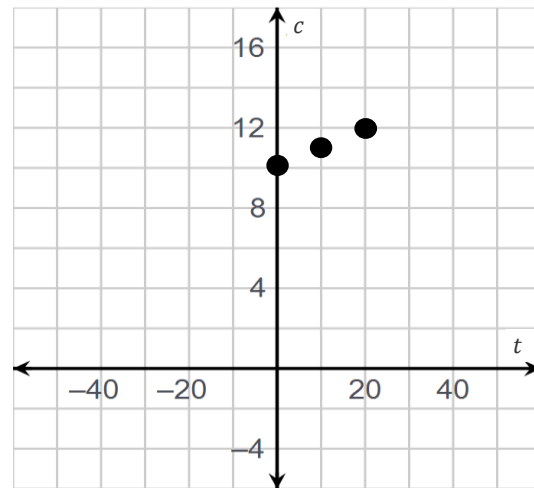
The points from the table are plotted on the graph.

There cannot be a negative amount of texts sent. There also cannot be a fractional amount of texts sent.

So this is a [_____] graph, and we would not connect the points.

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Writing and Graphing a Real-World Linear Relationship

WRITING THE EQUATION

Daniel's freezer is set to 0°F. He placed a loaf of bread that was at a temperature of 78°F in the freezer. The bread cooled at a rate of 12°F per hour. Write and graph an equation that models the temperature, t, of the bread and the hours, h, in the freezer.

☐ = temperature of bread	☐ = number of hours in the freezer

$$t = 78 - \boxed{}$$

GRAPHING THE EQUATION

$$t = 78 - 12h$$

Time (h)	Temp (t)
0	78
2	
4	30
6	

Sketch a graph of the function.
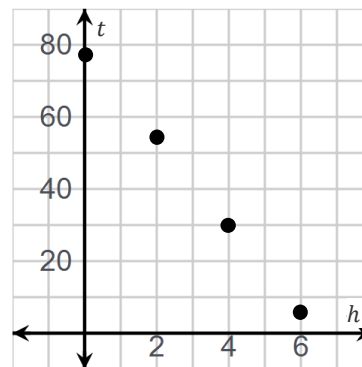
Look at our viable solutions. We can't have a negative value for h, because we can't have a negative amount of hours. We can have fractional values of hours, and we can have fractional values of the temperature. So, this is a

☐ graph.
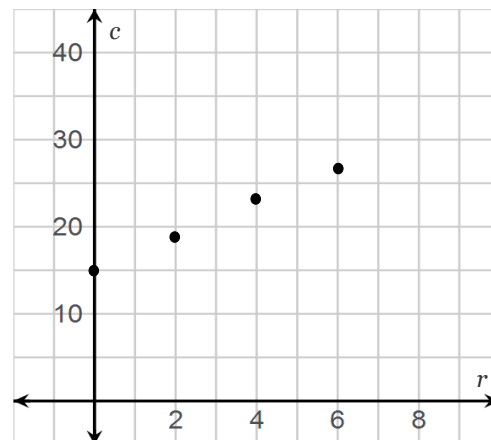
Writing and Graphing a Real-World Linear Relationship

At an amusement park, patrons pay a $15 entrance fee and $2 for each ride. Write and graph an equation that models the number of rides, r, and the total cost, c.

$\boxed{}$ = number of rides

c = total $\boxed{}$

$c = \boxed{} + 2r$

r	c
0	
2	19
4	23
6	

This would have to be discrete, because I cannot have fractional amounts of rides. So these points will not be $\boxed{}$.
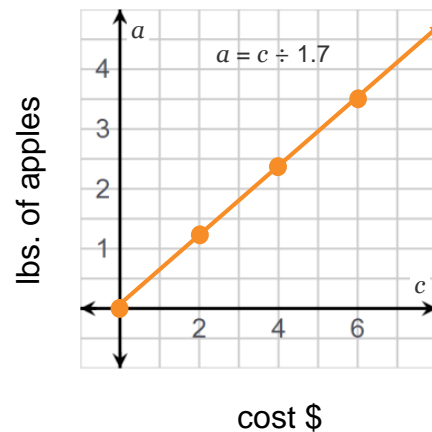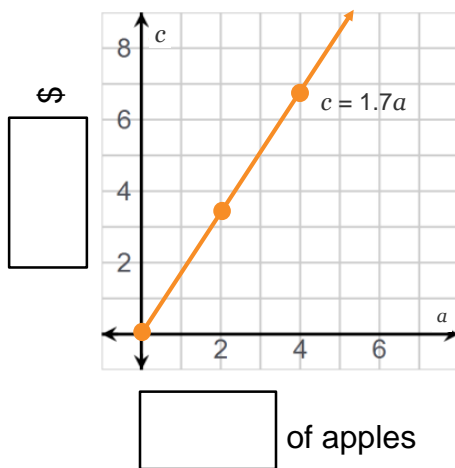
Slide 13

Comparing Two Graphs

ANALYZING THE AXES

Look at these graphs and determine what each is showing. **Assume** a is the number of pounds of apples and c is the cost in dollars of the apples.

$c = 1.7a$

$a = c \div 1.7$

$ of apples

cost $

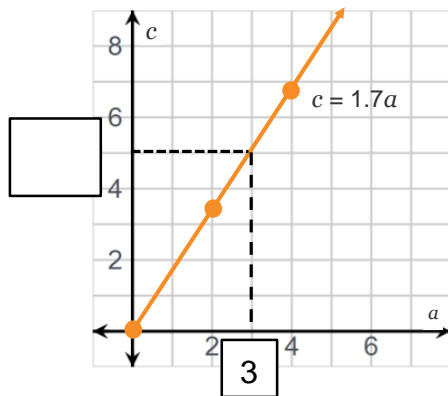The same data is shown on both graphs, but the quantities are switched.

Slide 13

Using Graphs to Answer Questions

Look at these graphs and determine what each is showing. Assume a is the number of pounds of apples and c is the cost in dollars of the apples.
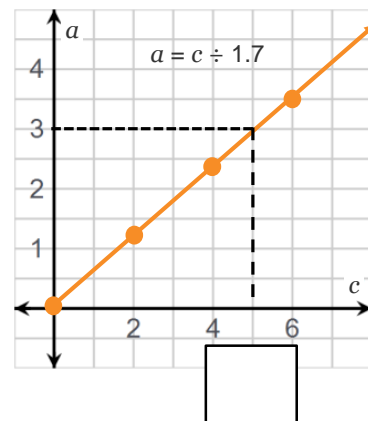
How much does a pounds of apples cost?

How many pounds of apples can be purchased with c amount of money?

$c = 1.7a$

3

How much does 3 pounds of apples cost?

[ ] dollars

$a = c \div 1.7$

Summary | Writing and Graphing Equations in Two Variables

Lesson Question

What can a coordinate graph tell you about a relationship between quantities in a real-world scenario?

Answer

Use this space to write any questions or thoughts about this lesson.