

Assignment

LESSON 1: How Does Your Garden Grow?

Write

Explain how the following terms are related: *linear relationship*, *proportional relationship*, *equivalent ratios*, and *direct variation*.

Remember

For a graph to represent a proportional relationship, the points of the graph must form a straight line and pass through the origin of the graph.

For a table of values to represent a proportional relationship, all the ratios of corresponding x - and y -values must be constant.

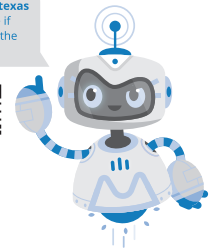
Practice

1. Analyze each table shown. Determine if the relationship is proportional.

If the relationship is proportional, state the constant ratio for the relationship.

- Of the 75 7th graders at Strong School, 25 participate in at least one sport. Of the 120 8th graders at Strong School, 30 participate in at least one sport.
 - Of the 210 7th graders at Kelley School, 190 have a cell phone. Of the 168 8th graders at Kelley School, 152 have a cell phone.
2. Match each graph with its scenario. Then, state if the scenario represents a linear relationship. If it represents a linear relationship, state if it represents a proportional relationship.
- Vanessa and Michelle must decide how to divide 16 marbles among themselves.
 - The perimeter of a square is 4 times the length of one side of the square.
 - The area of a square is calculated by squaring the length of one side of the square.
 - When Tara, a nurse, works on Saturdays, she is paid a \$30 bonus plus \$20 per hour worked.

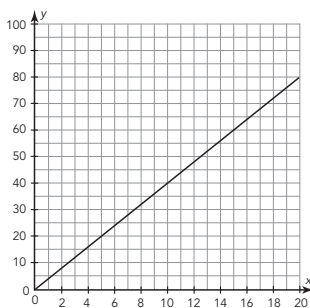
Visit livehint.com/texas or use this QR code if you need a hint on the Practice questions.



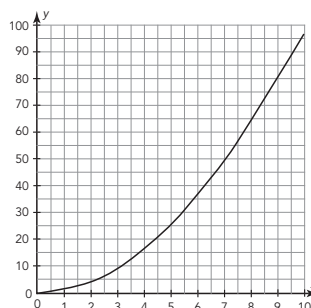
Strong School	Play Sports	Total
7th Graders	25	75
8th Graders	30	120

Kelley School	Cell Phones	Total
7th Graders	190	210
8th Graders	152	168

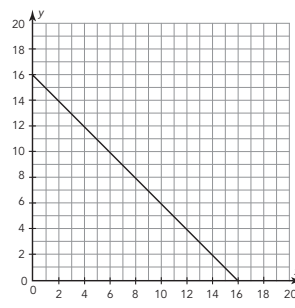
Graph A



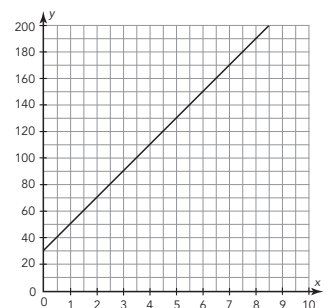
Graph B



Graph C



Graph D



3. In 2010, Chevrolet produced 12,194 Corvettes. That means they made about 34 Corvettes per day.
 - a. Create a table to show the number of Corvettes made in at least 5 different numbers of days.
 - b. Use the table to determine if this situation represents a proportional relationship.
 - c. Use the data in the table to create a graph of the total number of Corvettes produced over time.
 - d. Does the number of Corvettes vary directly with the number of days? Explain using the graph.

Stretch

Another way to classify varying quantities is as an inverse variation, or inversely proportional. The tables represent inverse variations. Study the tables of values and make a conjecture about the relationship between the quantities that illustrate inverse variation.

Number of Hours	Number of People
2	6
3	4
$\frac{1}{12}$	144

Width of Rectangle	Length of Rectangle
2	18
12	3
0.5	72

Review

Use proportions to solve each.

1. In the town of Clover, 3 out of 5 citizens who are eligible to vote did so in the fall election.
 - a. Determine the number of citizens that voted in the fall election if 400 citizens were eligible.
 - b. Determine the number of citizens that were eligible to vote in the fall election if 180 actually voted.
2. The student council at Camp Creek Middle School determines that 3 out of 4 students prefer that all school assemblies be held on Friday afternoon.
 - a. If 200 students are surveyed, how many will prefer that school assemblies be held on Friday afternoon?
 - b. If 747 students prefer the school assemblies be held on Friday afternoon, how many students were surveyed?

Write a unit rate to represent the relationship between the given quantities. Round to the nearest hundredth, if necessary.

3. 2.5 liters \approx 0.66 gallon

4. 430.6 centimeters \approx 169.5 inches

Determine each quotient.

5. $67.36 \div 3.2$

6. $3401.74 \div 7.9$