Chapter 1 Ratios and Proportional Reasoning

Lesson 1-9 Direct Variation
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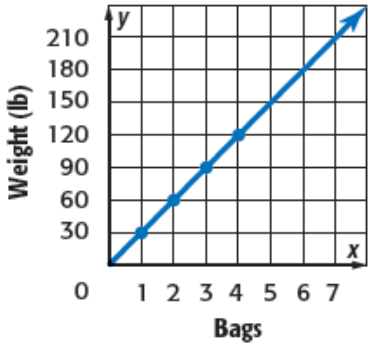
1 **Veronica is mulching her front yard. The total weight of mulch varies directly with the number of bags of mulch. What is the rate of change?**



Since the graph forms a line, the rate of change is constant. Use the graph to find the constant of proportionality.

$$\frac{\text{weight (lb)}}{\text{bags}} = \frac{30}{1}$$

The rate of change is 30 pounds per bag.

5 **Determine whether the linear function is a direct variation. If so, state the constant of proportionality.**

Minutes, *x*	185	235	275	325
Cost, *y*	60	115	140	180

Compare the ratios to check for a common ratio.

$$\frac{\text{cost}}{\text{minutes}} \quad \frac{60}{185} \text{ or } \frac{12}{37} \neq \frac{115}{235} \text{ or } \frac{23}{47} \neq \frac{140}{275} \text{ or } \frac{28}{55} \neq \frac{180}{325} \text{ or } \frac{36}{65}$$

The linear function shown in the table is not a direct variation because there is no common ratio.