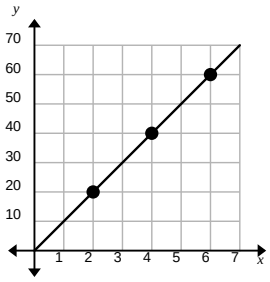
Name _____ Period_____ Date_____

Direct Variation: Constant of Proportionality (Variation), Slope & Unit Rate (page 1)

Consider the table. Note that the ratio of the two quantities is constant ($\frac{20}{2}=\frac{40}{4}=\frac{60}{6}$), indicating a proportional relationship. This relationship is called a **direct variation**. This constant ratio is called the **constant of proportionality** or **constant of variation.**

Babysitting (hours), x	*Money Earned ($), y*
2	20
4	40
6	60



Consider the graph of a line containing these points.

Determine the slope: $\frac{change\ in\ y}{change\ in\ x}=\frac{20}{2}=10$

What does this mean? *$10 is earned per hour babysitting*

Recall, this is also called the *unit rate* (a rate with 1 in the denominator).

Therefore, note that the **constant of proportionality (variation), the slope, and the unit rate all have the same value.**

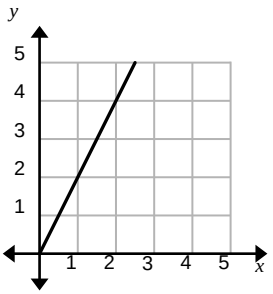
Example problems: Determine the unit rates:

1. Bamboo that grows 5 inches in 2.5 hours.

2.

Cyclist Ride	
Hours	Miles
3	24
6	48

3.



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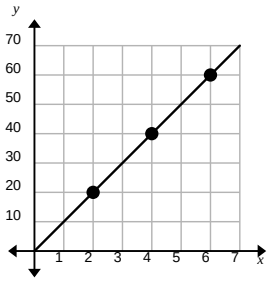

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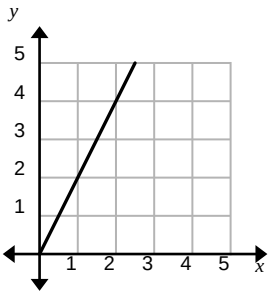

Direct Variation: Constant of Proportionality (Variation), Slope & Unit Rate (page 2)

You can use tables, graphs and words to represent proportional relationships. Fill in the missing information; determine the unit rate.

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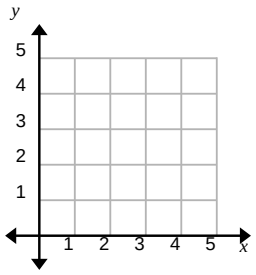
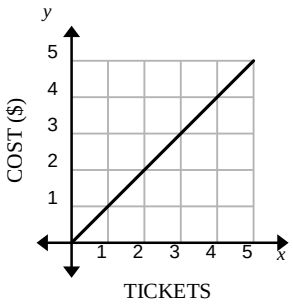
<table><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>		A grocery store sells 2 red peppers for $4.
<table><tr><td colspan="2">Raffle Tickets</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>		

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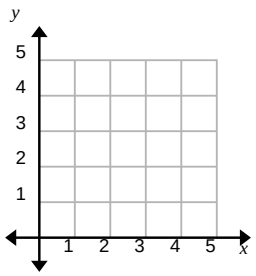
<table><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>		A grocery store sells 2 red peppers for $4.
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