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Direct Variation Lesson 1-9

A **direct variation** is a linear relationship in which two quantities have a **constant** ratio. As one variable increases the other _____, as one decreases the other variable _____. We say that *y* varies directly with *x*.

⇒ **Real life examples of Direct Variation:**

1) If you take a taxi, the amount of miles you travel varies to the amount of money you would pay.
(more miles = more money)

**Think of another real life example of direct variation and write it below:*

_____.

Examples:

Formula/Equation

Direct variation equations uses the formula:

$$y=kx$$

Where *k* is the constant ratio or the constant of proportionality/constant of variation/constant rate of change/slope.

x and *y* will always be variables that are changing.

Ex) The equation y = 2x represents the amount of money y Valentina has to pay for *x* miles of her taxi trip. Identify the constant of proportionality. Explain what it represents in this situation.

The constant of proportionality is ____. So, Valentina pays ____ for every mile she travels.

Writing a Direct Variation Equation

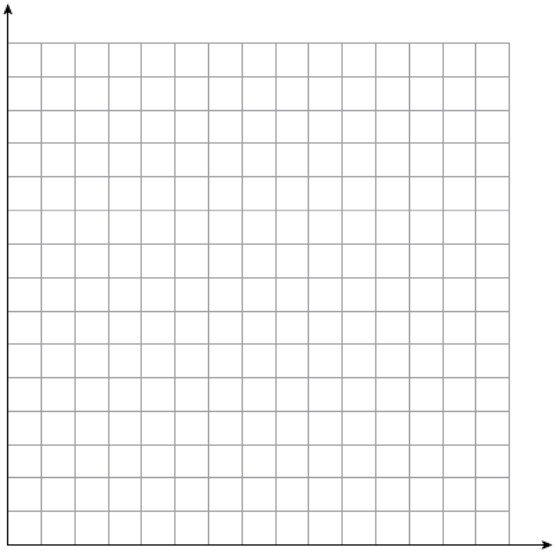
If *y* varies directly with *x*, write an equation for the direct variation. Then find the value.

If y = -2 when x = 8, find y when x = 7.

Graph

Skate Land charges $4 per hour plus $3 for a quad skate rental. Make a table and graph to show the cost for 1, 2, 3, and 4 hours of skating at skate land.

Time (h)	Cost ($)



Is there a direct variation? _____

_____.

- For a graph to show a direct variation, it must go through the _____.

Table

The table of a direct variation has a constant rate of change.

Two packs of pokémon card packs cost $3.00. Show the cost of 1, 2, 3, and 4 packs of pokémon cards. Is there a direct variation? Explain.

Number of Packs	Cost ($)

There _____ a direct variation because

_____.