Unit 3 Glossary Terms

constant of proportionality

In a proportional relationship, the values for one quantity are each multiplied by the same number to get the values for the other quantity. This number is called the constant of proportionality.

In this example, the constant of proportionality is 3, because $2 \cdot 3 = 6$, $3 \cdot 3 = 9$, and $5 \cdot 3 = 15$. This means that there are 3 apples for every 1 orange in the fruit salad.

number of oranges	number of apples
2	6
3	9
5	15

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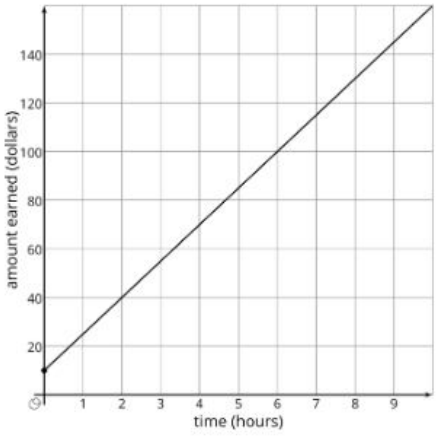
rate of change

The rate of change in a linear relationship is the amount y changes when x increases by 1. The rate of change in a linear relationship is also the slope of its graph.

In this graph, y increases by 15 dollars when x increases by 1 hour. The rate of change is 15 dollars per hour.



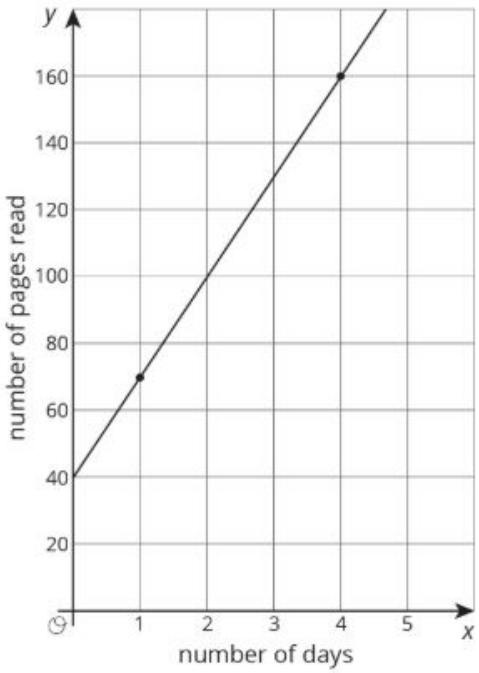
linear relationship

A linear relationship between two quantities means they are related like this: When one quantity changes by a certain amount, the other quantity always changes by a set amount. In a linear relationship, one quantity has a constant rate of change with respect to the other.

The relationship is called linear because its graph is a line.

The graph shows a relationship between number of days and number of pages read.

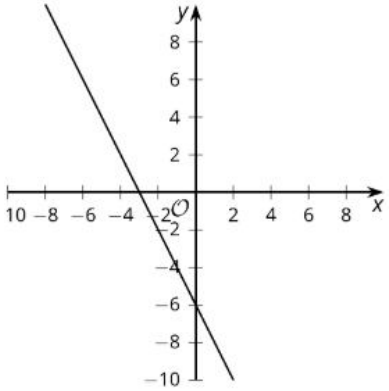
When the number of days increases by 2, the number of pages read always increases by 60. The rate of change is constant, 30 pages per day, so the relationship is linear.



Vertical intercept

The vertical intercept is the point where the graph of a line crosses the vertical axis.

The vertical intercept of this line is (0,-6) or just -6.



solution to an equation with two variables

A solution to an equation with two variables is a pair of values of the variables that make the equation true.

For example, one possible solution to the equation $4x + 3y = 24$ is $(6, 0)$. Substituting 6 for x and 0 for y makes this equation true because $4(6) + 3(0) = 24$.