

7.RP Proportionality

Task

A text book has the following definition for two quantities to be directly proportional:

We say that y is directly proportional to x if $y = kx$ for some constant k .

For homework, students were asked to restate the definition in their own words and to give an example for the concept. Below are some of their answers. Discuss each statement and example. Translate the statements and examples into equations to help you decide if they are correct.

- Marcus:

This means that both quantities are the same. When one increases the other increases by the same amount. An example of this would be the amount of air in a balloon and the volume of a balloon.

- Sadie:

Two quantities are proportional if one change is accompanied by a change in the other. For example the radius of a circle is proportional to the area.

- Ben:

When two quantities are directly proportional it means that if one quantity goes up by a certain percentage, the other quantity goes up by the same percentage as well. An example could be as gas prices go up in cost, food prices go up in cost.

- Jessica:

When two quantities are proportional, it means that as one quantity increases the other will also increase and the ratio of the quantities is the same for all values. An example could be the circumference of a circle and its diameter, the ratio of the values would equal π .



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