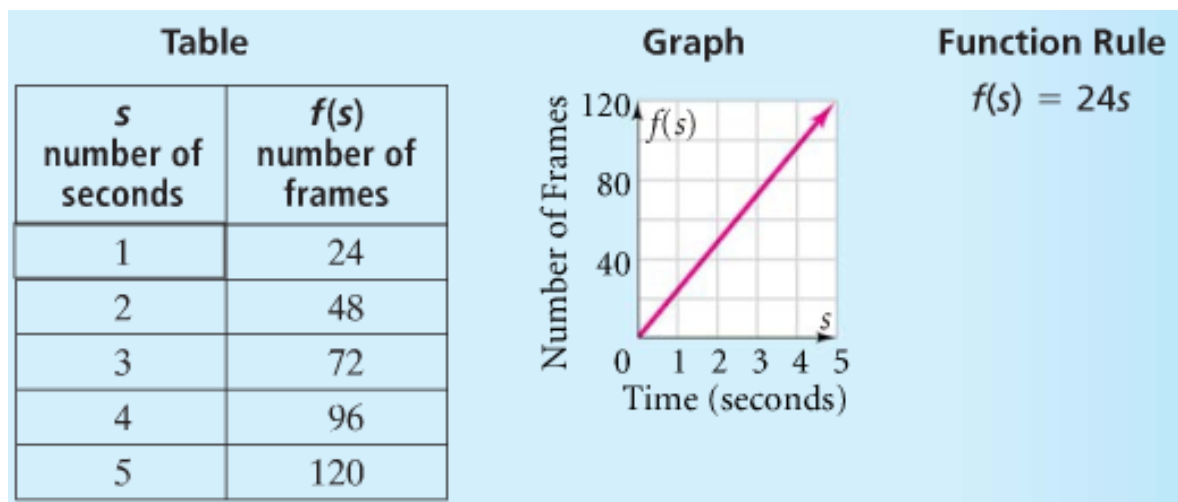


Objective: IWBAT write an equation of a direct variation.

...And Why – To write a direct variation relating to weather, as in example 3.

As you watch a movie, 24 individual pictures, or frames, flash on the screen each second. Here are three ways you can model the relationship between the number of frames $f(s)$ and the number of seconds, s .



1. As the number of seconds doubles, what happens to the number of frames?
2. Find the ratio $\frac{\text{number of frames}}{\text{number of seconds}}$ for each pair of data in the table.
3. For every increase of 1 second on the horizontal axis of the graph, what is the increase on the vertical axis?
4. What do you notice about your answers to questions 2 and 3 and the coefficient of s in the function rule?
5. What number of frames corresponds to $s = 0$?

What is the ordered pair on the graph for the seconds and number of frames when $s = 0$?

Definition – Direct Variation

A function in the form _____, where _____ is a direct variation.

The _____ for direct variation k is the coefficient of x . The variables y and x are said to vary directly with each other.

Example 1T – Is an Equation a Direct Variation?

Is each equation a direct variation? If it is, find the constant of variation.

a. $2x - 3y = 1$

b. $2x - 3y = 0$

Example 1S – Is an Equation a Direct Variation?

Is each equation a direct variation? If it is, find the constant of variation.

a. $7y = 2x$

b. $3y + 4x = 8$

Example 2T – Writing an Equation Given a Point

Write an equation for the direct variation that includes the point $(-3, 2)$.

Example 2S – Writing an Equation Given a Point

Write an equation for the direct variation that includes the point $(-3, -6)$.

Example 3T – Real World Problem Solving

The weight an object exerts on a scale varies directly with the mass of the object. If a bowling ball has a mass of 6 kg, the scale reads 59. Write an equation for the relationship between weight and mass.

Example 3S – Real World Problem Solving

A recipe for a dozen corn muffins calls for 1 cup of flour. The number of muffins varies directly with the amount of flour you use. Write a direct variation for the relationship between the number of cups flour and the number of muffins.