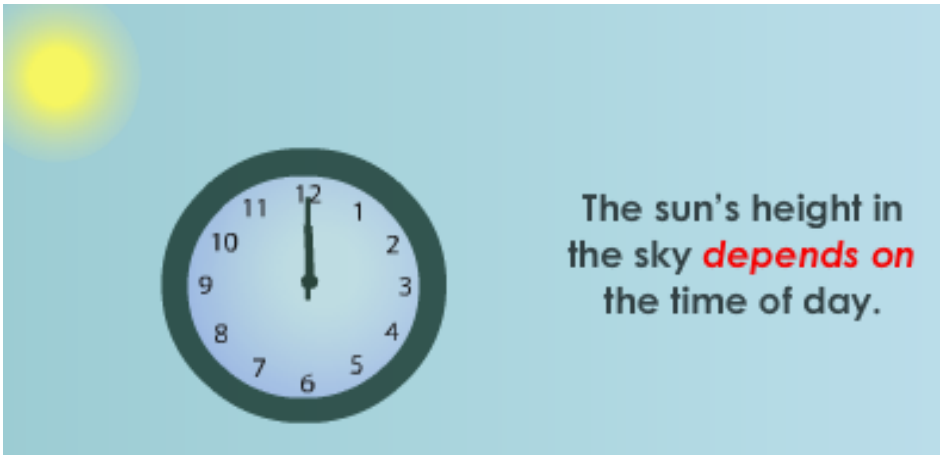
What is a function?

In this unit, you will learn about an important math concept called a **function**.

Functions appear in everyday life when two quantities are related to each other so that one quantity *depends on* the other.

Here are two examples of functions.

Examples:



In the examples you just saw, the height of the sun in the sky and the size of the tree both depend on time.

Each of these examples is a function because it meets the condition that one thing depends on another.

- In English, you would use the phrase ***depends on*** to describe this relationship.

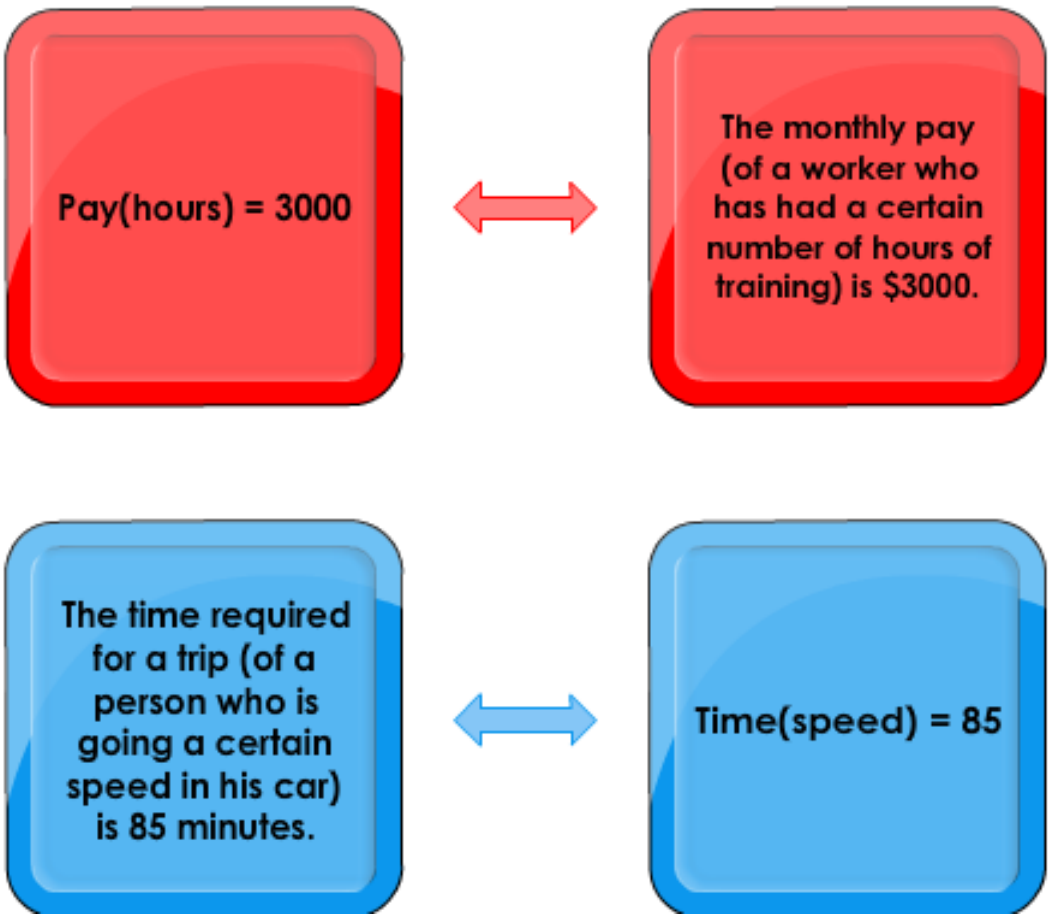
- In algebra, you would replace the phrase *depends on* with the phrase ***is a function of.***

Example:

Pay(hours)

THE PARENTHESES ARE USED HERE TO SHOW THAT PAY DEPENDS ON HOURS.

IN OTHER WORDS, THE PAY FOR EACH MONTH IS A FUNCTION OF THE NUMBER OF HOURS OF TRAINING THE WORKER HAD.



Using Function Notation for General Relationships

So far you have seen how to use function notation to describe a general relationship where one quantity depends on another.

Pay(hours) → The pay for each month (which depends on the number of hours of training)

Using Function Notation for Specific Values

You can also use function notation to indicate the pay given to a worker with a *specific* number of hours of training.

See if you can guess the meaning of the function notation below before revealing the answer.

Pay(40) → The pay for each month (for a worker who has had 40 hours of training)

Notice that the function notation Pay(hours) indicates clearly that the pay for each month depends on the number of hours of training. But it is also a lot to write.

For this reason, most people shorten their function names.

For example, a good name for the pay function might be *P*. And you could use the letter *h* to stand for hours.

Pay(hours)

***P*(*h*)**