

Here is another example of a function. It shows the relationship between the speed of a car, which we will represent as “x”, and the distance it takes to stop on dry asphalt at that speed, which we will represent as y.

Insurance companies use functions like this one to establish fault in car accidents.

(This function does not take into account how long it takes a person to react and step on the brake.)

Here is the function.

$$G = \frac{\mu^2}{20.8}$$

μ “mew” is the coefficient of friction, and G is the force of gravity.

The function can also be written using x and y as:

$$y = \frac{x^2}{20.8}$$

So let’s start by creating a table of the stopping distances at various speeds.

When the car is going 30 mph, it takes 43 feet to stop, rounded to the nearest foot

When the car is going 45 mph, it takes 97 feet to stop.

When the car is going 60 mph, it takes 173 feet to stop.

x	y

And so on...