

Carnegie Learning Algebra 1

Study Guide –

- *Variable and Constant Quantities*
- *Independence and Dependence*

Problem Situation

You are selling Subway coupons each day for a week to raise money for your class trip. The price of each coupon is \$6.

The amounts in a problem situation that *may change* are the *variable* quantities. An amount that will *remain the same* throughout the problem is a *constant* (or fixed) quantity.

The coupons are *always* \$6 each, so that is the *constant* quantity. The number of coupons sold and, therefore, the amount of money raised *can change* from day to day, so these are the *variable* quantities.

The amount of money raised on a given day *depends* on how many coupons you sold that day.

You must *sell* a coupon *before* you get money, so the number of coupons sold is the *independent* variable. You won't raise any money until you sell some coupons, so money raised is *dependent* on coupons sold.

- *Function Notation*

Let **M** stand for the money you raised. Let **C** represent how many coupons you sold.

To figure out how much money you raised, **M**, you would multiply the number of coupons you sold, **C**, by the price of each coupon, \$6.

$$M = C \cdot 6$$

In *function notation* this is

$$M(C) = C \cdot 6$$

Say it as "*M of C equals C times 6*". It's just a different way to write the equation. All that really happens is that you put "**(C)**" beside the **M** from the original equation.