

## Functions 8.F.4 Post-Test

Identify the rate of change, initial value, independent variable, and dependent variable. Then describe the rate of change and initial value in the context of each situation. Finally give the equation of the function unless the equation was already given.

1. The amount of money in dollars a person gets paid ( $p$ ) based on the number of Avon make-up packages he or she sells ( $a$ ) is modeled by the following function:  $p = 250a - 150$ .

Rate of Change: \_\_\_\_\_

Initial Value: \_\_\_\_\_

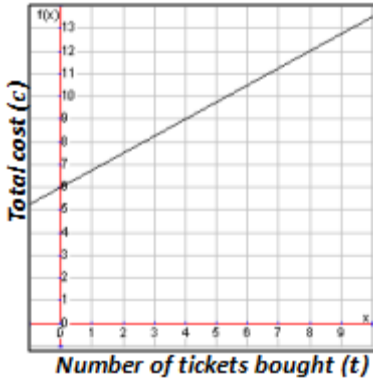
Independent Variable: \_\_\_\_\_

Dependent Variable: \_\_\_\_\_

Contextual Description of  
Rate of Change

Contextual Description of  
Initial Value

2. The function relating the cost in dollars of entering a carnival ( $c$ ) to how many tickets you buy ( $t$ ) is shown by the following graph:



Rate of Change: \_\_\_\_\_

Initial Value: \_\_\_\_\_

Independent Variable: \_\_\_\_\_

Dependent Variable: \_\_\_\_\_

Equation of the Function:

\_\_\_\_\_

Contextual  
Description of  
Rate of Change

Contextual  
Description of  
Initial Value

3. Kristaph wants to go bowling for his 13<sup>th</sup> birthday party. The cost of the birthday party ( $c$ ) is based on the number of friends that he invites ( $f$ ) as shown in the following table.

$f$	1	2	3	4	5	6	7	8	9	10
$c$	53	56	59	62	65	68	71	74	77	80

Rate of Change: \_\_\_\_\_

Initial Value: \_\_\_\_\_

Independent Variable: \_\_\_\_\_

Dependent Variable: \_\_\_\_\_

Contextual Description of  
Rate of Change

Contextual Description of  
Initial Value

Equation of the Function: \_\_\_\_\_

4. Imagine you're spending winter break on vacation in Florida. You have saved \$500 and plan to spend only \$75 per day while in Florida. Think of the function that demonstrates the money you have ( $m$ ) based on the number of days ( $d$ ) you spend in Florida.

Rate of Change: \_\_\_\_\_

Initial Value: \_\_\_\_\_

Independent Variable: \_\_\_\_\_

Dependent Variable: \_\_\_\_\_

Contextual Description of  
Rate of Change

Contextual Description of  
Initial Value

Equation of the Function: \_\_\_\_\_

## Functions 8.F.4 Post-Test Answers

Identify the rate of change, initial value, independent variable, and dependent variable. Then describe what the rate of change and initial value mean in the context of each situation. Finally give the equation of the function unless the equation was already given.

1. The amount of money in dollars a person gets paid ( $p$ ) based on the number of Avon make-up packages he or she sells ( $a$ ) is modeled by the following function:  $p = 250a - 150$ .

Rate of Change:   250  

Initial Value:   -150  

Independent Variable:    $a$   

Dependent Variable:    $p$   

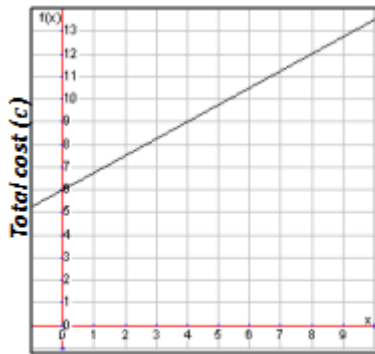
Contextual Description of  
Rate of Change

You make \$250 per make-up package sold.

Contextual Description of  
Initial Value

It costs a fee of \$150 to be able to sell the make-up packages.

2. The function relating the cost in dollars of entering a carnival ( $c$ ) to how many tickets you buy ( $t$ ) is shown by the following graph:



Number of tickets bought ( $t$ )

Rate of Change:    $\frac{3}{4}$   

Initial Value:   6  

Independent Variable:    $t$   

Dependent Variable:    $c$   

Equation of the Function:

   $c = \frac{3}{4}t + 6$   

Contextual  
Description of  
Rate of Change

It costs \$3 for 4 tickets or \$0.75 per ticket.

Contextual  
Description of  
Initial Value

There is a \$6 fee just to get into the carnival regardless of how many tickets are purchased.

3. Kristaph wants to go bowling for his 13<sup>th</sup> birthday party. The cost of the birthday party ( $c$ ) is based on the number of friends that he invites ( $f$ ) as shown in the following table.

$f$	1	2	3	4	5	6	7	8	9	10
$c$	53	56	59	62	65	68	71	74	77	80

Rate of Change:   3  

Initial Value:   50  

Independent Variable:    $f$   

Dependent Variable:    $c$   

Contextual Description of  
Rate of Change

It costs \$3 per person invited, possibly for the bowling shoes.

Contextual Description of  
Initial Value

It costs \$50 to rent the bowling alley no matter how many friends are invited.

Equation of the Function:    $c = 3f + 50$   

4. Imagine you're spending winter break on vacation in Florida. You have saved \$500 and plan to spend only \$75 per day while in Florida. Think of the function that demonstrates the money you have ( $m$ ) based on the number of days ( $d$ ) you spend in Florida.

Rate of Change:   -75  

Initial Value:   500  

Independent Variable:    $d$   

Dependent Variable:    $m$   

Contextual Description of  
Rate of Change

You plan to spend \$75 per day which is why it is negative.

Contextual Description of  
Initial Value

You can the vacation with \$500.

Equation of the Function:    $m = -75d + 500$