**Piecewise Functions**

***Recall: Evaluating Functions***

1. Given , find \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Given , find \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Given find : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_

***Piecewise Functions***

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a function with different equations with different given domains.

***Evaluating Piecewise Functions***

* To evaluate a piecewise function, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the value of x into the “piece” of the function in which x fits in the domain

Find

Where does 5 fit? or

f(5) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_

Find

Where does fit? or

f() = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find

Where does 2 fit?

or or

h(2) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_

Find

Where does fit?

or or

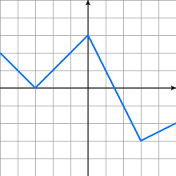
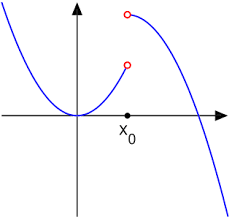
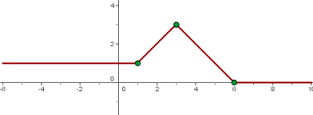
h() = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A cell phone company charges customers a monthly fee based on the number of minutes, x, they use each month. This is represented by the piecewise function below.

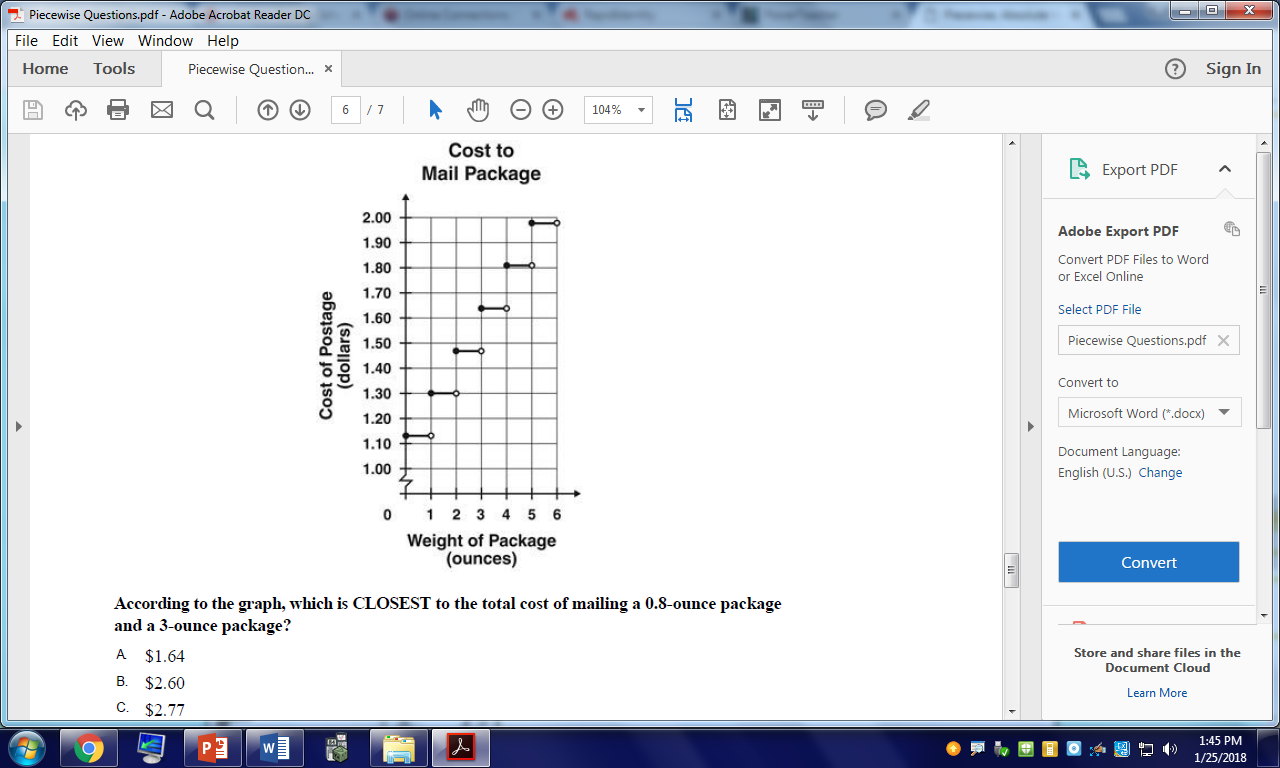
1. If a customer used 400 minutes, what was their monthly bill?
2. If a customer used 900 minutes what would be their cost?
3. What is a better deal, talking 999 minutes or 1,000 minutes?

***Graphs of Piecewise Functions***

* The graph of a piecewise function can either be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or not continuous
  + If you can move your pencil across the graph without picking it up, the function is continuous
    - ******Decide whether or not each graph below is continuous or not continuous:

Continuous Continuous Continuous

Not Continuous Not Continuous Not Continuous

***Step Functions***

* A common type of piecewise functions is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ function. The step function has all constant pieces. Step functions are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Step functions are commonly used when calculating things like cell phone bills, taxi rides, parking deck costs, etc.

**Use the graph of the step function to the right to answer the questions below:**

1. How much would it cost to ship a package weighing 4 ounces? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What would be the cost of shipping a package weighing 0.8 ounces? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What would be the total cost of shipping both a 5-ounce package and a 3.4-ounce package? \_\_\_\_\_\_\_\_\_\_