**U.S. Postal Service Rates**

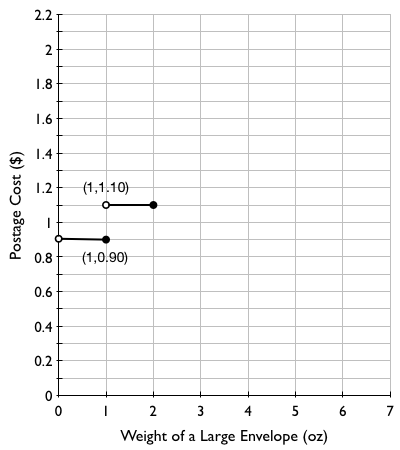
The table below shows first-class mail postage charges based on the weights of **large envelopes**.

|  |  |
| --- | --- |
| **Large Envelopes** | |
| **Weight, *w***  **(in ounces)** | **Postage charged**  **(in $)** |
|  | 0.90 |
|  | 1.10 |
|  | 1.30 |
|  | 1.50 |
|  | 1.70 |
|  | 1.90 |
|  | 2.10 |

*Source: USPS.com, April 2012*

The relationship between postage charge and weight is a function. This particular function is an example of a **step function**.

1. Identify the independent variable.
2. Identify the dependent variable.
3. If your letter weighs 1.8 oz. the postage charge is \_\_\_\_\_.
4. If your letter weights 4.3 oz. the postage charge is \_\_\_\_\_.
5. If your letter weighs 5 oz. the postage charge is \_\_\_\_\_.
6. If your letter weighs 6.6 oz, the postage charge is \_\_\_\_\_.
7. Is weight a function of postage charge? *Hint*: Look at your answers from question (4) and question (5).
8. Complete the graph below.



1. Explain why there is a closed circle at the point (1, 0.90) on the graph.
2. Explain why there is an open circle at the point (1, 1.10) on the graph.
3. Explain why there is an open circle at the point (0, 0.90) on the graph.
4. Could there be two different *closed* points with the same input value on the graph of a function? Explain.