Functions Notes

Review

A relation is a set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A function is a \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in which each element of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_ values) is paired with exactly one element of the \_\_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_ values).

1. **Is it a function?**
   1. There are two easy ways to determine if a relation is a function.
      1. In a table or set of ordered pairs, check to see if each \_\_\_\_\_\_\_\_\_\_\_ has only \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2) Use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

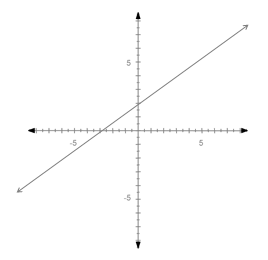
1. **Vertical Line Test**
   1. **What is it?**

It is an easy way to determine if a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ represents the graph of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* 1. **How do you use it?**
     1. Use a pencil, ruler, or another straightedge to represent a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
     2. Place the straightedge to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the graph. Move the straightedge from left to right, \_\_\_\_\_\_\_\_\_\_\_ the graph.
     3. If the straightedge touches \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ than \_\_\_\_\_\_\_\_\_\_ point \_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ on the graph, then the graph represents a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  2. **Why does it work?**

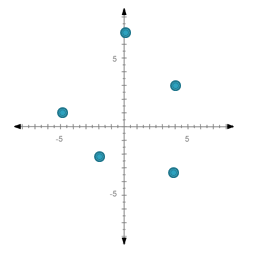
If a vertical line touches only \_\_\_\_\_\_\_\_ point at a time, then each \_\_\_\_\_\_ coordinate will be paired with only 1 \_\_\_\_\_\_\_\_\_\_ coordinate.

* 1. **Example**



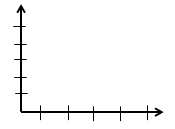
Does the graph represent a function? Explain.

* 1. **Example 2**



Does the graph represent a function? Explain.

1. **Graphs of Functions**
   1. The graph of a function can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. **Continuous Functions**
   1. In the graph of a continuous function, the points are \_\_\_\_\_\_\_\_\_\_\_\_\_ with a continuous \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   2. This is because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ point on the line has \_\_\_\_\_\_\_\_\_\_\_\_\_\_ based on the original problem.
   3. Example: A scientist measured the temperature of a liquid each hour from 10:00am to 2:00pm. At 10:00am, the temperature was 20. She found that the temperature was rising by 20 each hour.
   4. Create a table and a graph to represent this situation.

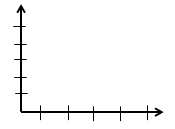


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* 1. Determine the independent and dependent variables.

Independent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Dependent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Discrete Functions**
   1. In the graph of a discrete function, there are \_\_\_\_\_\_\_\_\_\_\_\_\_\_, distinct points.
   2. These points are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_connected by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because only the points have meaning.
   3. The points between the plotted points \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ be interpreted based on the original situation.
   4. Example: Tickets for the movies cost $10 each. Determine the cost for 1, 2, 3, 4 or 5 people to go to the movies.
   5. Create a table and a graph to represent this situation.



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* 1. Determine the independent and dependent variables.

Independent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Dependent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_