**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_ Score:\_\_\_\_\_**

**U8 HW #2** *Representations of a Function*

1. Use the pattern below to answer the questions that follow.

**Pattern:**

1. Express this relation as a table, mapping, and graph.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table**   |  |  | | --- | --- | | Stage  number | Number of Smiles | |  |  | |  |  | |  |  | |  |  | | |  |  | | --- | --- | | *Stage* | *Smiles* | |  | |   **Mapping** |
| **Graph** | **Set of Ordered Pairs** |

1. Is this relation a function? Explain how you know.

**Directions:** Determine if each relation or situation defines a function. Justify your answer.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. **Input:** age   **Output:** shoe size   |  |  | | --- | --- | | *Age* | *Shoe Size* | | 13  14  6  7  8  9 | |   Function? Explain. | 1. **Input:** number of chairs   **Output:** number of legs   |  |  | | --- | --- | | *Chairs* | *Legs* | | 1  2  3  4  4  8  12  16 | |   Function? Explain. |
| |  |  | | --- | --- | | ***x*** | ***y*** | | 0.2 | 1.5 | | 0.4 | 1.25 | | 0.6 | 1.5 | | 0.8 | 1.25 |   Function? Explain. | Function? Explain.  Linear or Non-linear? |
| 1. A car is traveling at a constant rate of 60 mph. Is the car’s distance traveled a function of the number of hours the car has been driving?   Function? Explain.  Linear or Non-linear? | Function? Explain.  Linear or Non-linear? |
| 1. You know your cousin lives at the zip code 12345 so you type it in Google to find your cousin’s full address. Is the address a function of zip code?   Function? Explain.  Hint: Is your cousin’s address the only one that will come up in Google when you enter the zip code? | 1. You know your cousin’s cellular phone number is (123) 456-7890 so you dial that number to call him. Is the person being called a function of phone number dialed?   Function? Explain. |
| Input Output  3  6  9  12  5  6  10  12  4  78  7  10  12  Function? Explain.  Linear or Non-linear? | Function? Explain.  Linear or Non-linear?  Function? Explain.    Linear or Non-linear? |
| 1. .   Function? Explain. | Function? Explain. |

**Directions:** Circle the letter next to the table if the data represents a linear function.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A** | |  |  | | --- | --- | | ***x*** | ***y*** | | 0 | –5 | | 1 | 0 | | 2 | 5 | | 3 | 10 | | **B** | |  |  | | --- | --- | | ***x*** | ***y*** | | 0 | 15 | | 1 | 12.5 | | 2 | 10 | | 3 | 7.5 | | **C** | |  |  | | --- | --- | | ***x*** | ***y*** | | 0 | 4 | | 1 | 8 | | 2 | 16 | | 3 | 32 | | **D** | |  |  | | --- | --- | | ***x*** | ***y*** | | 0 | 98 | | 1 | 98 | | 2 | 98 | | 3 | 98 | |

**Directions:** Circle the letter next to the graph if it represents a linear function.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **A** |  | **B** |  | **C** |  |
| **D** |  | **E** |  | **F** |  |
| **G** |  | **H** |  | **I** |  |

Directions: Circle the letter next to each equation if it represents a linear function.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A** |  | **B** |  | **C** |  | **D** |  |
| **E** |  | **F** |  | **G** |  | **H** |  |
| **I** |  | **J** |  | **K** |  | **L** |  |

1. What method or strategy did you use to determine which equation(s) are linear? What patterns did you look for?