**Unit 4 Practice Test: Direct Proportions and Inequalities**

**Show all your work for full credit.**

 **1.** Complete the table below using substitution?

|  |  |  |
| --- | --- | --- |
| **Input (*x*)** | **4*x* – 1** | **Output (*y*)** |
| 2 | 4(x) – 1 |  |
| 3 | 4(x) – 1 |  |
| 4 | 4(x) – 1 |  |

|  |
| --- |
| **Hot Dog Buns** |
| **Number of****Packages** | **Number** **of Buns** |
| 2 | 16 |
| 4 | 32 |

 **2.** Mr. Shaw is buying hot dog buns for a cookout. Using the table as a guide, how many packages will she need to buy to have 54 buns?

**Use the table below for Exercises 3 and 4.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **x** | 1 | 3 | 4 | 6 |
| **y** | 4 | 12 | 16 | *n* |

**3.** What is the rule to find the value of the missing term?

 **A.** $y=\frac{4}{x}$**B. y =** 4*x* **C. y =** *x* + 2 **D. y =** *x* + 4

**4.** What is the value of *y* if *x-value* is 13 (Use the equation you chose in #3)?

**5.** Name two characteristics all direct proportion graphs include.

 1.

 2.

**Use the following information for Exercises 6-7. Sarah earns $8 for every hour that she babysits.**

 **6.** Write an equation to find *t*, the total amount Sarah will earn after babysitting *h* hours?

 **7.** How much will Sarah earn if she babysits for 8 hours?

**8.** What could be a solution of the inequality *y* – 5 ≥ 6?

|  |
| --- |
| **Heights (in.)** |
| Mike | 64 |
| John | 40 |
| Anna | 54 |
| Lily | 52 |

**9.** The inequality *h* ≥ 52 represents the minimum height *h* necessary to ride a certain roller coaster. Who can ride the rollercoaster?

**10.** Graph the following inequalities listed below?

|  |  |
| --- | --- |
| **Inequality** | **Graph on Number Line** |
| *t* ≥ 2 |  |
| *t* ≤ 2 |  |
| *t* > 2 |  |
| *t* < 2 |  |

**11.** Lisa can spend at least $75 at Six Flags. Write **and** give a possible solution for the situation.

**12.** Write an inequality to represent the graph below. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 List three possible solutions: \_\_\_\_\_\_, \_\_\_\_\_\_, \_\_\_\_\_\_



**List 3 possible solutions for the following inequalities:**

**13.** 3 + *x* ≤ 20 **14.** 2*x* ≥ 360 **15.** $\frac{x}{8}$ < 4

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_