**QUIZ – Unit 4 Investigation 5**

1. The National Honors Society is hosting their annual Presidents’ Birthday Ball. Jack and Regina are in charge of food and beverages. Jack is going to make rainbow sherbet punch by mixing ginger ale and cranberry juice. Regina will then float a quart of rainbow sherbet on top. Ginger ale costs $2 per gallon, and cranberry juice costs $5 per gallon. The Honors Society has budgeted $120 for the ginger ale and juice. What are the different amounts of ginger ale and juice that Jack and Regina can buy with $120 and have no money left over?
2. Define the variables. g. Sketch the graph.



1. Create an equation to model the situation.

1. What is the *x-*intercept? What does it mean?
2. What is the *y-*intercept? What does it mean?
3. What is the slope? What does it mean?
4. If 30 gallons of ginger ale are purchased, how many gallons of cranberry juice will be bought? Show your work.
5. Fill in the blank with $y=mx$, $y=mx+b$, constant of variation, or *Ax +By = C*.
6. Standard Form of a linear equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. Slope Intercept Form of a linear equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. Direct Variation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. In direct variation problems, the slope is the number ‘*y*/*x*’ and is called the

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Find the *x* and *y*-intercept, and then graph the line. State the slope of the line.



$9x-6y=36$

*x*-intercept = *y*-intercept =

Slope =

1. Rewrite the function in slope intercept form Graph it. State the slope and *y*-intercept



$2x+7y=28$

 *x*-intercept = *y-*intercept =

 Slope =

1. The weight of people on the moon varies directly with their weight on earth.
2. Complete the table below:

|  |  |  |
| --- | --- | --- |
| **Weight on earth****(*x*) in pounds** | **Weight on the moon (*y*)**  | **Ratio*****y* ÷ *x*** |
| 120 | 20 |  |
| 240 | 40 |  |
| 360 |  |  |
| 480 |  |  |

1. Circle the choices which make the statement true.

As a person’s weight on the moon (***increases / decreases***), the weight on earth (***increases / decreases***).

1. Identify the constant of variation (*i.e.* slope).
2. One of the points is (0, 0). What would this point mean in the context of the problem?
3. Write a linear equation that represents this situation.
4. If a person weighs 150 pounds on earth, how much would she or he weigh on the moon? Show how you arrived at your answer.