Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 2 Test Review**

**Study your properties! Give an example of each of the following:**

Domain : x: Input What is the domain and range for these ordered pairs: (2,-1) (-4,0) (0,5) (2,2) (-3,-1)

Range : y: Output What is the domain and range for

$$f\left(x\right)=\frac{1}{\sqrt{4-x}}$$

Set Notation, $\left\{\right\}$

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|

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| --- |
|  **What you need to know & be able to do**  |

 | **Things to remember** |  |  |
| **Unit Conversions**- 5280 feet = 1 miles- 0.034 ounces = 1 milliliter- 0.454 kg = 1 pound- 1.6 kilometers = 1 mile- 73 gallons = 2 barrels- 1.5 quarts = one liter- 4 quarts = 1 gallon- 16 ounces = 1 pound |

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| --- |
|  1. Convert 6 liters to quarts.  |

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| --- |
|  2. A bowl of cereal weighs 60 oz. How heavy is it in kg?  |

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|

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| --- |
|  Convert 12 kilometers to inches.  |

 |

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| --- |
|  You are in a car traveling that is traveling at 65 mph. How many feet per minute is this rate? |

 |
| **Identify Vocabulary** | TermsCoefficientsConstantsDegree

|  |
| --- |
|  |

 | How many terms are in the expression -12*x*3 + 7*x*2 – 4*x* –19? |

|  |
| --- |
|  What are degree, coefficients, and constants in the expression 20*x4* – 11*x* +3?  |

 |
| **Linear Models**Slope Intercept y = mx + bPoint Slopey – y1 = m(x – x1)Standard FormAx + By = C |

|  |
| --- |
|  * m – increase or decrease
* b – starting point
* (x1, y1) any point
* A, B & C: integers
* A > 0
 |

 |

|  |
| --- |
|  Lucy gets paid $150 a week and $10 for every computer she sells. Write an expression that represents her weekly income.  |

 |

|  |
| --- |
|  Andy wants to mail a package. It costs $4.99 plus $0.30 for every ounce the package weighs. Write an equation that represents the total cost of shipping the package.  |

 |
| **Consecutive Integers** | Start with x.Define Variable.x+ (x + 1) + (x+2) + … | 3 consecutive integers add up to 153. Find the three integers.  | Three ODD integers are less than the sum of 381. Find the integers.  |
| **Solving Equations** |  | You are trying to save $20 a week to buy a new CD player. During the last 4 weeks you have saved $35, $15, $10, and $12. How much do you need to save this week to average $20 for the 5 weeks?  | The width of a rectangle is 11 feet longer than the length. The perimeter of the rectangle is 70 feet. Find the length and the width.  |
| **Solve for 2-variable equations** | ax + by = c * Never move the variable you’re solving for.
 | Tony is going to buy fruit for a smoothie. He wants raspberries, r, that are $4 a carton and strawberries, s, that are $2 a carton. Write an equation to represent all the combinations of fruit if Tony has $18 to spend.  | Using your equation from #17, solve for r, the number of raspberries.  |
| If he buys 2 cartons of raspberries, how many strawberries can he buy?  |
| **Literal Equations** | PEMDAS* Backwards, from the ground up!
 | Solve for x: y = -4x + 16  | Solve for L: P = 2(L + W)  |

**Fill in the table to convert from one form of linear equation to another:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Slope Intercept** | **Point Slope** | **Standard Form** | **Slope, Point** |
| **y = 2x - 1** |  |  |  |
|  | $$y+1=-\frac{2}{5}(x-3)$$ |  |  |
|  |  | **3x – 1 = 4** |  |
|  |  |  | **-1/2, (0,3)** |

**Fill in the following table with equations:**

|  |  |  |  |
| --- | --- | --- | --- |
| Equation | Slope(m) | Parallel Line (//) | Perpendicular Line (⊥)  |
| 1) y = -2x + 1 |  |  |  |
| 2) $y=-\frac{1}{3}x-2$ |  |  |  |
| 3) y = -4 x + 13 |  |  |  |
| 4) 2x – y = -4 |  |  |  |
| 5) (y -2) = -2 (x -2) |  |  |  |

**Find the solution of the linear system graphically. Write your solution in the blank provided.**

**\_\_\_\_\_\_\_**1. \_\_\_\_\_\_\_2.

  ![[image]]()

**Use substitution to solve the linear system. SHOW ALL WORK and write your solution in the space provided.**

\_\_\_\_\_\_\_\_3.  \_\_\_\_\_\_\_4.

**Use elimination to solve the linear system. SHOW ALL WORK and write your solution in the space provided.**

\_\_\_\_\_\_\_\_5.  \_\_\_\_\_\_\_6.

**Use any method to solve the linear system. SHOW ALL WORK and write your solution in the space provided.**



\_\_\_\_\_\_\_\_7. 

**Systems of Linear Equations Word Problems:**

8. Bill wants to buy some CDs at the music store. Used ones sell for $4.99, and new ones sell for $13.99. He has $75 to spend that he got for his birthday.

a) Write a linear inequality to represent the situation. Can Bill by 4 used and 4 new CDs?

9. A store sold 32 pairs of jeans for a total of $1050. Brand A sold for $30 per pair and Brand B sold for $35 per pair. How many of Brand A were sold?

10. You are selling tickets for a basketball game. Student tickets cost $3 and general admission tickets cost $5. You sell 350 tickets and collect $1450. How many of each type of ticket did you sell?

**Graph the systems of inequalities, and name a solution.**

\_\_\_\_\_\_\_\_11.  \_\_\_\_\_\_\_12.



**Systems of Linear Inequalities Word Problems:**

13. Julia and Jackson are raising money for a Mother’s Day gift. They have a lemonade stand and are selling cups of lemonade for $2 each and cookies for $1.50 each. They must raise at least $150.

* 1. Write an inequality to express the income from the lemonade stand.
	2. They expect to sell at least 3 dozen cookies. Write an inequality to represent this situation.

14. You are looking to buy a bouquet of flowers for your favorite math teacher. Lilies cost $3.00 each and roses cost $4.00 each. You have budgeted no more than $28 to spend on flowers. Graph a system of inequalities to illustrate how many of each type of flower you can purchase if you want to buy at least half a dozen flowers. Explain how to use the graph to determine possible solutions.

