**Honors Homework 2.2 Name:**

**You MUST show your work to receive full credit!**

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| Write the following algebraically: Johnny works seven hours less than three times as many as Sally. | Find the area of a rectangle with a length of $4x^{2}-5y$ and a width of $2x+7y.$ | Is the product of a rational and an irrational **sometimes, never, or always RATIONAL**? Prove it with an example(s). |
| Simplify: $$\left(2x- 8x^{3}\right)-3x(-4x^{3}-8x^{2}-4x)$$ | Given the common difference and the 7th term, write the explicit formula in sequence notation: d = -8 $a\_{7}= $24 | Given the explicit formula, write the **recursive** formula: f(x) = f(x-1) -3 , f(1) = 12 |
| Evaluate the following:$$f\left(x\right)=-3x^{2}-4x+8$$**Find f (-7)** | Write the equation in **slope-intercept form** for the following table: | For every hour that passes, the **original amount of 5 people** infected by the virus **doubles**. Is this:**Discrete or Continuous****Linear or Exponential** **Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| My 2nd term is 20 and my 6th term is 12500. **Find my ratio AND my missing terms.** | Graph the following:$$y=-3x+4$$ | **Find the** **slope** given the following two coordinates: $\left(-4, 7\right) \& (8, -17)$**Write the equation:** |
| Write the domain of the problem to the right.**Interval Notation:****Inequality Notation:** | Write the equation of the following: | Write the range of the problem to the left.**Interval Notation:****Inequality Notation:** |
| State which one has a greater rate of change: 1. Johnny owes 20 dollars on his lunch account
2. Suzie has 18 dollars to spend on her lunch account
 | What does a graph with a slope of **Undefined** look like?1. Rises from left to right
2. Falls from left to right
3. Vertical line
4. Horizontal line
 | Write the explicit formula for the sequence below and then find the 30th term. -11, -7, -3, 1Explicit:A(30)=  |
| Solve the following:$$\frac{3}{4}x-12= -48$$ | Find the slope given the following two coordinates: $\left(7,-7\right) \& (3,-7)$ | Given the following, write the **point-slope** formula: $ m= -6 (-2, 5)$ |
| Find the x-intercept and y-intercept of the following:$ y+5=3(x+1)$ x-int: \_\_\_\_\_\_\_\_ y-int: \_\_\_\_\_\_\_\_ | Given the point-slope formula, write the slope-intercept form:$$y+6=2(x-7)$$ | Find the x-intercept and y-intercept of the following:$ -3x+2y=48$ x-int: \_\_\_\_\_\_\_\_ y-int: \_\_\_\_\_\_\_\_ |
| Write the equation for the following scenario: A library has 8000 books and is adding 50 more each year: | Write the explicit formula for a geometric sequence where the second term is 10,000 and the 5th term is 80. | There are 20,000 owls in the wild. Every decade, the number of owls is halved. Is this:**Linear or Exponential** Write the equation for the scenario: |
| Write the equation for the following and fill in the blanks:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X | 1 | 2 | 3 | 4 | 5 |
| y | -10 |  |  | -80 |  |

 | A bank account starts with $50. Every month, the amount of money in the account quadruples. Is this:**Linear or Exponential** Write the equation for the scenario: | Write the equation for the following and fill in the blanks:

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| --- | --- | --- | --- | --- | --- |
| X | 1 | 2 | 3 | 4 | 5 |
| y | 5 |  |  |  | 17 |

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