**Honors Homework 2.1 Name:**

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

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| Convert 1000KL per day into gallons per hour. (3.79 L = 1 gal) | The perimeter of a rectangle is . The length is . Find the width | Provide an example of when the product of two irrational numbers is rational. |
| Simplify: | A rectangle has a length of x2 +1 and a width of 2x+7. What is the **area** of the rectangle? | Which one has a greater rate of change?    2. In the children’s book, The Magic Pot, every time you put one object into the pot, two of the same objects come out. Imagine that you have 5 magic pots. |
| Determine if the sequence is arithmetic, geometric or neither. Then list out the next 4 terms.  3, 5, 8, 12… | Determine if the sequence is arithmetic, geometric or neither. List out the next 4 terms and create the explicit equation.  4, -20, 100, -500… | Given the 7th and 11th term of an arithmetic sequence. Create the explicit formula.  A(7)= a(11)=  Explicit: |
| Given that the 10th term of a sequence is 22 and the common difference is 6, find the 5th term. Create the explicit equation that goes with this. | Find the rate of change (slope) for the table below. | Given the explicit formula below, write the recursive. Then list out the first 3 terms  a (n)= -12 + 4n  Recursive: |
| Create a graph that matches an arithmetic sequence and a graph that matches a geometric sequence. Be sure to label them. | Determine if the sequence is arithmetic, geometric or neither. List out the next 4 terms. Then create the recursive equation.  -64, -47, -30, -13… | Write the explicit formula for the sequence below and then find the 70th term.  -3, -7, -11  Explicit:  A(70)= |
| State which one has a greater rate of change:   1. A sunflower grows 2 inches everyday 2. An amaryllis that grows 18 inches in a week | Write explicit formula and then find which term will have a value of 54  6, 9, 12, 15  Explicit  A(\_\_\_)= 54 | Given the explicit formula below write the recursive. List out the first 5 terms. |
| In a geometric sequence, a(15)= 2,560 and r=2. Find a(1). Make the explicit formula. | Best Buy Shoes had a back to school special. The total bill for six pairs of shoes came to $69.24 (before tax). How much did the average price of shoes cost? | Solve: |
| Tell if the following are discrete or continuous, linear or exponential.   * For every hour that passes the amount of bacteria doubles. * The water flowing down the Mississippi River at a rate of 4 ml/sec. | In a geometric sequence, a(6)=36 and a(12)= 2304. Find the constant ratio then write the recursive formula | Solve the following:  2x – 6 = -12 |
| Given the following two terms of an arithmetic sequence, write the explicit formula.  A(5) = 45 a(23)= -9  Explicit: | In an arithmetic sequence the 10th term is 450 and the common difference is 5. Find the 51st term. | Write the explicit formula for a geometric sequence where the second term is 10,000 and the 5th term is 80. |
| Tell if the following is discrete or continuous, linear or exponential:   * To meet the demands placed on them the brick layers have started to increase the number of bricks they lay by 5% each day. * The number of students who are late on a bus increases by 4. | Explain why the following table has more than one answer for its missing terms. Then state what those two possible answers are for each term.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | X | 1 | 2 | 3 | 4 | 5 | | y | -10 |  | -40 |  | -160 | | What is one main difference between discrete data vs. continuous data? |