**You must show work/explain EVERY question, even the multiple choice questions.**

1. If find

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | 28 | 3) | 36 |
| 2) | 34 | 4) | 38 |

1. \_\_\_\_\_\_\_\_\_

2.) A sequence has an initial value of 10 and each term is twice the previous term. Which function models this sequence?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) |  | 3) |  |
| 2) |  | 4) |  |

1. \_\_\_\_\_\_\_\_\_

3.) Given the length of three sides of a triangle, which is a right triangle?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | 10, 26, 24 | 3) | 30, 15, 26 |
| 2) | 20, 12, 18 | 4) | 40, 50, 80 |

1. \_\_\_\_\_\_\_\_\_

4.) A mouse population starts with 2,000 mice and grows at a rate of 5% each year. The number of mice after t years can be modeled by the equation . What is the **average rate of change** in the number of mice between the second year and the fifth year, rounded to the *nearest whole number*?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | 116 | 3) | 348 |
| 2) | 2205 | 4) | 2553 |

4.) \_\_\_\_\_\_\_\_\_

5.) Seven less than the product of twice a number is greater than 5 more than the same number. Which integer satisfies that inequality?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | 1 | 3) | 12 |
| 2) | 2 | 4) | 13 |

5.) \_\_\_\_\_\_\_\_

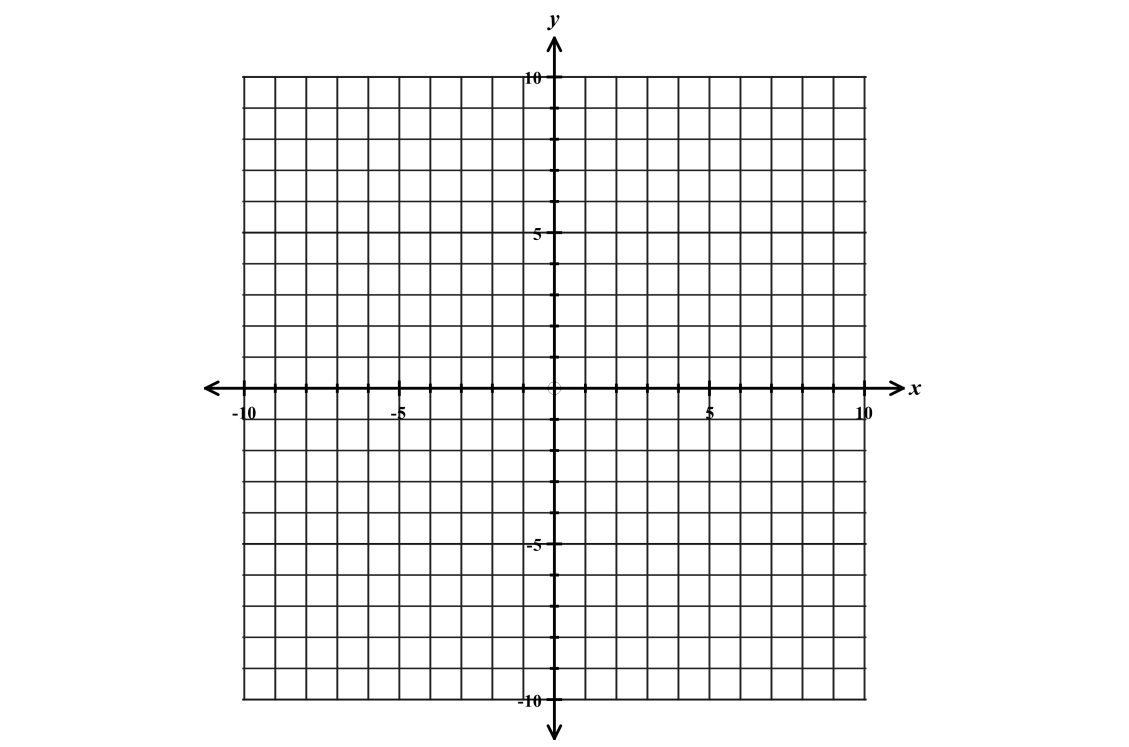
6.) A bakery ordered 20 bags of flour and 16 pounds of butter on a Monday for a total cost of $110. On Tuesday the bakery ordered 30 bags of flour and 12 pounds of butter for a cost of $120.

A. Write a system of equations that could be used to find the cost of one bag of flour and one pound of butter. [2 points]

B. Solve the system of equations to find the cost of each. [3 points]

One bag of flour $ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ On pound of butter $ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7.) Let and . On the axes provided draw the graphs of and . Include any tables and don’t forget to label! [3 points]



State all values of for which [2 points]