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

1. Mr. Grow invested $2,500 in a savings account that earns 3% interest compounded annually. He made no additional deposits or withdrawals. How much money would he have in his account at the end of 4 years?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | $$\$2,813.77$$ | 3) | $$\$2,812.16$$ |
| 2) | $$\$7,140.25$$ | 4) | $$\$600.25$$ |

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

 2.) Solve for $x$ in the following equation: $ax+5x-4=10$

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | $$x=\frac{9}{a}$$ | 3) | $$x=\frac{6}{5}$$ |
| 2) | $$x=\frac{14}{a+5}$$ | 4) | $$x=\frac{14}{5a}$$ |

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

 3.) Joseph’s taxi charges $10.00 for the initial service of any drive. Then, the fee for each mile is $0.75. Which type of function is represented by this situation.

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | $$Linear$$ | 3) | $$Quadratic$$ |
| 2) | $$Exponential$$ | 4) | $$Absolute Value$$ |

3.) \_\_\_\_\_\_\_\_\_

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

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

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

 5.) A function f is written as $f\left(x\right)=-4\left(x+1\right)+2x$. What is the value of $f(3)$?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | -10 | 3) | 5 |
| 2) | -5 | 4) | 10 |

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

 6.) Functions f(x) and g(x) are shown below.

 $f\left(x\right)=3^{x}$ $g\left(x\right)=9x$

1. Graph these functions on the coordinate plane to the

right for all domain values $0\leq x\leq 4$

1. Use the graph from part A to approximate the solution**s**

 of the equation $f(x)=g(x)$

7.) A sequence of numbers is shown below.

2, 4, 8, 16, 32, …

1. Is this an example of an arithmetic or geometric sequence? Why?
2. Using the sequence, write an equation for the nth term.
3. Find $a(9).$