**Module 3 Quiz Review**

(Polynomial Functions 3.1 – 3.4)

Part I:

*Draw an example of each of the following*

|  |  |  |
| --- | --- | --- |
| \_\_\_\_\_\_ 1. | Linear |  |
| \_\_\_\_\_\_ 2. | Exponential |  |
| \_\_\_\_\_\_ 3. | Quadratic |  |
| \_\_\_\_\_\_ 4. | Cubic |  |
| \_\_\_\_\_\_ 5. | Logarithmic |  |

**Part II:**

6. Label the above functions as whether they or NOT also be considered a polynomial function.

7. If you know that $f\left(x\right)+g\left(x\right)=2x-5$, then give an example of possibilities for $f(x)$ and $g\left(x\right)$.

a. Give a linear example

b. Give a quadratic example

c. Give a cubic example

8. If $f\left(x\right)=2x^{2}+5x-3$ and $g\left(x\right)=4x-1$, then $f\left(x\right)×g\left(x\right)=$

9. If a linear equation has a slope of -4 and a y-intercept of 3, then what do you know about the end behavior as $x\rightarrow \infty $?

10. Are they increasing?

a. Give an example that is always increasing and explain how you know.

b. Give an example that is always decreasing and explain how you know.

c. Give an example that is increasing and decreasing and explain how you know.

**Part III**: *Short Answer*

$f\left(x\right)=3x-6$ $g\left(x\right)=-5x-2$ $h\left(x\right)=2x^{2}+3$

11. Find $f\left(x\right)+g(x)$

12. Find $f\left(x\right)-g(x)$

13. Find $f\left(x\right)+h(x)$

14. Find $f\left(x\right)∙g(x)$

15. Find $h\left(x\right)∙g(x)$