**Module 4 Quiz Review**

(Rational Expressions and Functions 4.1 – 4.4)

1. Solve and decide whether x = 1 is a solution.

a.

b.

c.

d.

2. Solve and determine the roots:

3. Solve the following equations and find the extraneous solutions if possible?

|  |  |
| --- | --- |
| a. | c. |
| b. | d. |

4. List everything you know about rational expressions.

5. Explain the end behavior of all proper rational functions

6. give an example of an odd function and make a sketch.

7. Give an example of an even function and make a sketch.

8. Decide whether x=-3 is a solution to the following function

9. Give two examples of proper rational functions

10. What is the degree of the following polynomials?

a.

b.

c.

d.

11. Give three examples of rational expressions

Find the **roots** and **domain** to the following equations:

|  |  |  |
| --- | --- | --- |
| 12. | 13. | 14. |
| Root(s): | Root(s): | Root(s): |
| Domain: | Domain: | Domain: |

Below you have Improper Rational Expressions written as . Use long division to rewrite the expressions as

|  |  |  |  |
| --- | --- | --- | --- |
| 15. |  | 16. |  |

17. Write a function that has a root at , a domain where , and exactly one extraneous solution. You may leave your function in factored form.