|  |  |
| --- | --- |
| **Polynomial Equations and Factoring (5.3)** | **Math 098** |

Consider 

|  |  |
| --- | --- |
| 1. Using the graphing calculator, solve using the *intersect method*. | 1. Using the graphing calculator, solve using the *zero method*. |

Vocabulary: Zeros and Roots: The *x*-values for which a function  is 0 are called the *zeros* of the function. The *x*-values for which an equation such as  is true are called the *roots* of the equation.

Find the zeros of the function  using the graphing calculator.

Here is a very important obvious fact. The principle of zero products: For any real numbers *a* and *b*,  if and only if  or .

When a polynomial is written as a product, we say it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The zeros of a polynomial function are zeros described by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the polynomial.

Solve 

Given , find the zeros of the function.

To \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an expression means to write it as a product.

To factor out the greatest common factor (GCF) we will do \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Factor out the greatest common factor (GCF)

1. 
2. 
3. 
4. 

Factor by grouping

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

Solve 

Summary: To use the principle of zero products

1. Write an equivalent equation with 0 on one side, using the additions principle.
2. Factor the nonzero side of the equation.
3. Set each factor that is not a constant equal to 0.
4. Solve the resulting equations.