|  |
| --- |
| $$Standard Form: ax^{2}+bx+c=0$$ |
| $$Factored Form: y=a\left(x-r\right)\left(x-s\right)$$ |
| $$Vertex Form: y=a\left(x-h\right)^{2}+k$$ |
| $$x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$$ |

**Chapter 7 Review**

1. Graph *y* = –*x*2 – 4*x +* 12 and fill in the

 table for the relation.

|  |  |
| --- | --- |
| ***y-intercept*** |  |
| ***x*-intercept(s)** |  |
| **Axis of symmetry** |  |
| **Vertex** |  |
| **Domain** |  |
| **Range** |  |

****

 2. Fill in the table for the relation $y=-3x^{2}+9x+1$

|  |  |
| --- | --- |
| ***y-intercept*** |  |
| ***x*-intercept(s)** |  |
| **Axis of symmetry** |  |
| **Vertex** |  |
| **Domain** |  |
| **Range** |  |

****

****3. Solve the equation 3*x*2 + *x* = –4*x* + 5 two different ways:

Method 1: Graph two equations.

***y1*=** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***y2*=** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Method 2: Rewrite in standard form. Then solve the equation in standard form by graphing. (find x-intercepts)

****

***y1*=** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

****4. Solve the equation $2x^{2}-3x=-2x+4$ using either method

**Review:** When determining the solution of a quadratic function in the form ***a****x*2 + ***b****x* + ***c*** = 0, you are determining the or or .

The factored form of a quadratic function can be written as: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

where,

****

5. Sketch the graph of f(x) = 2 (*x* + 3) (*x* – 1).

1. Determine the root(s).
2. Determine the *y*-intercept.
3. Determine the axis of symmetry. d) Determine the vertex.

****

6. Sketch the graph of $f\left(x\right)=-2(x-2)(x+1)$

a) Determine the root(s).

b) Determine the *y*-intercept.

c) Determine the axis of symmetry. d) Determine the vertex.

7. A quadratic function has an equation that can be written in the form *f*(*x*) = *a*(*x* – *r*)(*x* – *s*)*.* The graph of the function has *x*-intercepts at (1, 0) and (3, 0) and passes through the point (–1, 16). Write the equation of the function.

8. A quadratic function has an equation that can be written in the form *f*(*x*) = *a*(*x* – *r*)(*x* – *s*)*.* The graph of the function has *x*-intercepts at ($2$, 0) and (4, 0) and passes through the point (1, –9). Write the equation of the function.

 9. Fill in the table for the quadratic function *f*(*x*) = *–*2(*x* + 5)(*x* + 2)*.*

|  |  |
| --- | --- |
| ***y*-intercept** |  |
| **Zeros** |  |
| **Axis of symmetry** |  |
| **Vertex** |  |

10. Solve using the quadratic formula

a) $y=2x^{2}-3x-4$ b) $y=3x^{2}-10x+6$