**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Graph each function. State the domain, the vertex (min/max point), the range, the**

**x-intercepts, and the axis of symmetry.**

|  |  |
| --- | --- |
| 1.) *f(x)= -x2 + 4* | Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  Vertex:\_\_\_\_\_\_\_\_  Max or min?\_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| 2.) *h*(*x) =* -*x*2 – 2*x* + 8 | Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  Vertex:\_\_\_\_\_\_\_\_  Max or min?\_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| 3.) *f(x)= x2 – 1* | Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  Vertex:\_\_\_\_\_\_\_\_  Max or min?\_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |

**HW#24 Worksheet Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Find the vertex of each parabola. Graph the function and find the requested information**

|  |  |
| --- | --- |
| **1.)** *f(x)= x*2 – 2*x* – 3 *a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| **2.)**  *y = -x*2 + *2x + 2 a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| **3.)** *g*(*x) = -2x*2 + *8x – 5 a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |

**Using a graphing calculator find the domain and range of each**

|  |  |
| --- | --- |
| 4.) | 5.) |

**State the domain and range of each:**

|  |  |
| --- | --- |
| **1.)**  *g*(*x) = 3x*2 *–* *3x – 6*  Created by webMathematica | **2.)** *h*(*x) = -2x*2 *+ 6x*  Created by webMathematica |
| **For #6, find the vertex of the parabola. Graph the function and find the requested information** | |
| **6.)**  *y = 2x*2 + *6x* *a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  Vertex:\_\_\_\_\_\_\_\_  Max or min?\_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |

**State the domain and range of each:**

|  |  |  |
| --- | --- | --- |
| **1.)** *f*(*x) = x*2 *– x – 2*  Created by webMathematica | **2.)** *y = -x*2 *+ 9*  Created by webMathematica | |
| **For #6, find the vertex of the parabola. Graph the function and find the requested information** | | |
| **6.)**  *g*(*x) = -2x*2 + *8x – 5 a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |

**For #1-2, find the vertex of each parabola. Graph the function and find the requested information**

|  |  |  |
| --- | --- | --- |
| **1.)** *y = x*2 – *2x – 2 a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ | |
| **2.)** *g*(*x) =* 2*x*2 – 2*x* – 10 *a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Domain: \_\_\_\_\_\_\_\_  Range: \_\_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |