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

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

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  1.) *f(x)= -x2 + 4*

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| --- | --- |
| x | y |
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 | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2.) *h*(*x) =* -*x*2 – 2*x* + 8

|  |  |
| --- | --- |
| x | y |
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 | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Inputs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Output: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*Roots*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  3.) *f(x)= x2 – 1*

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| x | y |
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 | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Independent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Dependent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*Solutions*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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

|  |  |
| --- | --- |
| x | y |
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 | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*zeros*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  2.) *y = -x*2 + *2x + 2 a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_

|  |  |
| --- | --- |
| x | y |
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 | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*x*-intercepts: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  3.) *g*(*x) = -2x*2 + *8x – 5 a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_

|  |  |
| --- | --- |
| x | y |
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 | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_x-values: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_f(x): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*solutions*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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

|  |  |
| --- | --- |
| 4.) Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 5.) Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |
| --- | --- |
|  6.) *g*(*x) = 3x*2 *–* *3x – 6* Created by webMathematicaDomain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  7.) *h*(*x) = -2x*2 *+ 6x*Created by webMathematicaInput: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Output: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Graph the function and find the requested information** |
| 8.) *y = 2x*2 + *6x* *a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| x | y |
|  |  |
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|  |  |

Wider or narrower than *y* = x2 ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*Roots*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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

|  |  |
| --- | --- |
|  **9.)** *f*(*x) = x*2 *– x – 2* Created by webMathematicaIndependent Values: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Dependent Values: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  **10.)** *y = -x*2 *+ 9*Created by webMathematicaInput Values: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Output Values: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Graph the function and find the requested information** |
|  11.) *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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*solutions*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |
| --- | --- |
|  12.) *y = x*2 – *2x – 2 a* = \_\_\_\_, *b* = \_\_\_\_, *c* = \_\_\_\_ | Vertex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max or min? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Direction of opening? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Wider or narrower than *y* = *x*2 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*solutions*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_Exit Ticket – Complete and hand to me before the end of class.13.) *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 ?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Input: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Output: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*solutions*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_y-intercept: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **x** |  |  |  |  |  |  |  |
| **y** |  |  |  |  |  |  |  |