**Practice:** Multiplying Polynomials to Standard Form Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Changing from Factored form and Vertex Form to STANDARD FORM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Factored Form | Zeros | A.O.S. | Vertex | Min/Max? |
| A. $f\left(x\right)=-3(x+9)(x-1)$ |  |  |  |  |
| B. $f\left(x\right)=\frac{1}{4}(x+2)(x-8)$ |  |  |  |  |

1. Explain how you would find the A.O.S. using the Zeros:
2. Explain how you find the Vertex using the A.O.S. :
3. Explain how you know is the parabola has a max. or min. :

|  |  |  |
| --- | --- | --- |
| Factored Form | Standard Form |  |
|  $f\left(x\right)=A(x-r\_{1})(x-r\_{2})$ | $$f\left(x\right)=Ax^{2}+Bx+C$$ | y-intercept ? |
| C. $f\left(x\right)=-3(x+9)(x-1)$ |  |  |
| D. $f\left(x\right)=\frac{1}{4}(x+2)(x-8)$ |  |  |

\*\* Use DESMOS to confirm your Standard Form is the same as your Factored Form!

|  |  |  |  |
| --- | --- | --- | --- |
| Vertex Form | Vertex | A.O.S. | Min/Max? |
| E. $f\left(x\right)=-\left(x-2\right)^{2}-3$ |  |  |  |
| F. $f\left(x\right)=2(x+4)^{2}-5$ |  |  |  |

1. Explain how you would find the A.O.S. using the Vertex:
2. Explain how you know is the parabola has a max. or min. :

|  |  |  |
| --- | --- | --- |
| Vertex Form | Standard form |  |
|  $f\left(x\right)=A(x-h)^{2}+k$ | $$f\left(x\right)=Ax^{2}+Bx+C$$ | y-intercept ? |
| G. $f\left(x\right)=-\left(x-2\right)^{2}-3$ |  |  |
| H. $f\left(x\right)=2(x+4)^{2}-5$ |  |  |

Use DESMOS to confirm your Standard Form is the same as your Factored Form!