$\qquad$ Date: $\qquad$
Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

| Topic | Things to remember | Examples |  |
| :---: | :---: | :---: | :---: |
| Characteristics of Quadratics | Vertex: (h, k) <br> Axis of Symmetry: $\mathrm{x}=\mathrm{h}$ | 1. Use the graph to answer the following. <br> Equation: <br> Vertex: <br> A.O.S.: | 2. Use the graph to answer the following. <br> Equation: <br> Vertex: <br> A.O.S.: |
| Transformations | Negative in front reflects across $x$-axis <br> Number in front stretches or shrinks <br> Number inside parenthesis moves left or right <br> Number alone moves up or down | Describe the transformations: $-\frac{1}{3} f(x+2)+1$ <br> 3. Write a quadratic equation that has been reflected and shifted right 7. | Describe the transformations: $f(x-4)+3$ <br> 4. Write the equation of a quadratic that has a vertex at $(-5,-3)$, opens up, and is stretched by a factor of 2 . |
| Graph Quadratics in Vertex Form | Vertex (h, k) <br> AOS $=h$ <br> Table, Edit Function, <br> Start = AOS <br> Scroll up and down to get other ordered pairs | 5. Graph the following function. $f(x)=(x+7)^{2}+4$  | 6. Graph the following function. $f(x)=-2(x-4)^{2}+8$  |


| Graph Quadratics in Standard Form | AOS: $x=\frac{-(b)}{2 a}$ <br> Vertex $\left(\frac{-(b)}{2 a}, f\left(\frac{-(b)}{2 a}\right)\right)$ <br> Table, Edit Function, <br> Start = AOS <br> Scroll up and down to get other ordered pairs | 7. Graph the following function. $f(x)=x^{2}-6 x+5$  | 8. Graph the following function. $f(x)=-x^{2}-6 x+8$  |
| :---: | :---: | :---: | :---: |
| Change form Vertex to Standard Form | Expand the binomial. <br> Distribute any number in front of the parenthesis. <br> Combine like terms. | 9. $f(x)=(x+2)^{2}-8$ | 10. $f(x)=-3(x-5)^{2}+1$ |
| Change from Standard Form to Vertex Form | Find a <br> Find the $h$-value by using $x=-b / 2 a$ <br> Plug in the $x$ to find the h-value | 11. $f(x)=x^{2}-2 x-8$ | 12. $f(x)=-2 x^{2}-16 x-32$ |
|  | Do 11-12 by hand, and 13-14 in the calculator. | 13. $f(x)=x^{2}+10 x+20$ | 14. $f(x)=x^{2}+6 x+9$ |
| Compare Quadratic Functions in Different Forms | Find the axis of symmetry, vertex, slope, and $y$-intercepts based on the equation or table given. | 15. $f(x)=2 x^{2}-12 x+25$ <br> Opens Up or Down? <br> Axis of Symmetry: $\qquad$ <br> Vertex: $\qquad$ <br> Zeros: $\qquad$ <br> y-intercept: $\qquad$ | 16. $\mathrm{f}(\mathrm{x})=-(x-2)^{2}+4$ <br> Opens Up or Down? <br> Axis of Symmetry: $\qquad$ <br> Vertex: $\qquad$ <br> Solutions: $\qquad$ <br> y- intercept: $\qquad$ |

