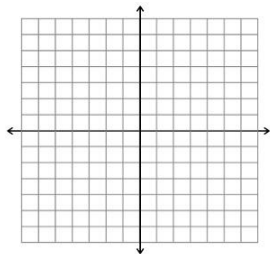


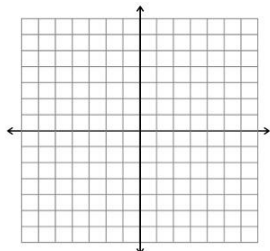
**Quadratic Pre assessment MATH III/IIIIH (These concepts should be prior knowledge) Name:**

1. What is the graph of a quadratic function called?
2. Factor this quadratic:  $x^2 - 9x - 22$
3. Factor this perfect square binomial:  $x^2 - 81$
4. Find the solutions of this quadratic(factor ; then set factors equal to zero):  $x^2 - 2x - 48 = 0$
5. Find the solutions of this quadratic (factor; then set factors equal to zero)= $2x^2 - x - 15 = 0$
6. What is the quadratic formula?
7. What does the quadratic formula tell you?
8. What part of the quadratic formula is the discriminant?
9. What does the discriminant tell you?
10. Use the quadratic formula to find the solutions:  $3x^2 + 5x - 3 = 0$

11. Draw a sketch of this quadratic function:  $f(x) = x^2 - 3$



12. Draw a sketch of this quadratic function:  $f(x) = -x^2 + 5$



13. What is the standard form of any quadratic function?
14. What is the vertex form of any quadratic function?
15. A quadratic that opens upward will have a (positive/negative) leading coefficient " $a$ ".
16. A quadratic that opens downward will have a (positive/negative) leading coefficient " $a$ ".
17. What is the equation for finding the axis of symmetry of a quadratic function?
18. The axis of symmetry gives you the \_\_\_\_\_ value of the vertex.
19. Once you have obtained the  $x$  value of the vertex, how do you find the  $y$  value?
20. What does the axis of symmetry do to a parabola?
21. When a quadratic is in vertex form,  $y = a(x - h)^2 + k$ , what does the  $(h, k)$  represent?
22. Given the parent function,  $f(x) = x^2$ , write an equation to model the following transformations:
- Shift right 7 units ; shift down 2 units
23. Given the parent function,  $f(x) = x^2$ , write an equation to model the following transformations:
- Reflect across the  $x$ -axis; shift down 2 units
24. **Use the following information about quadratic functions for Exercises 85–90.**  
**vertex form:  $y = a(x - h)^2 + k$       standard form:  $y = ax^2 + bx + c$**   
 . When  $y = -3x^2 - 18x - 23$  is written in vertex form, what is the value of  $k$ ?  
 . When  $y = 2(x - 3)(x + 5)$  is written in standard form, what is the value of  $b$ ?  
 . When  $y = -2(x + 3)^2 + 25$  is written in standard form, what is the value of  $c$ ?  
 . For  $y = 3x^2 - 7x + 5$ , what is the  $x$ -value of the vertex? Enter your answer as an improper fraction in simplest form.  
 . What is the  $y$ -coordinate of the vertex of  $y = -2(x + 1)^2 + 3$ ?  
 . How many units down must you shift the graph of  $y = 3(x + 3)^2$  to get the graph of  $y = 3(x + 3)^2 - 2$ ?