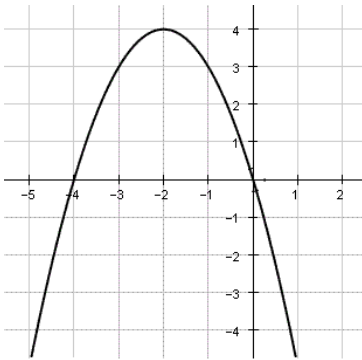


Algebra 2 – Unit 6 Test Review

Use the equation $y = x^2 + 6x + 5$ for problems 1 – 4.

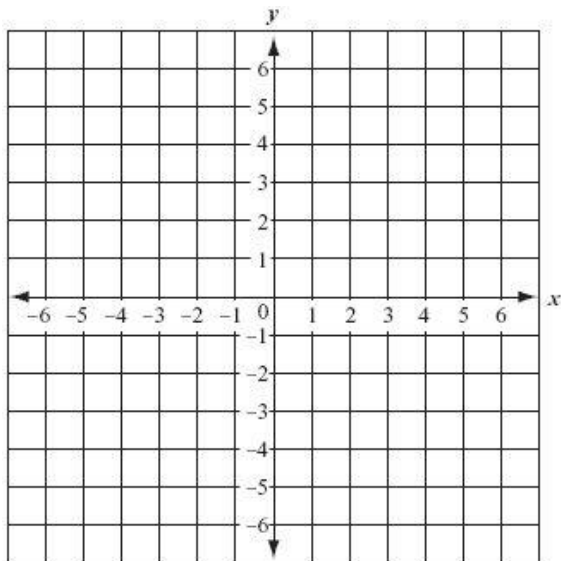
1. Give the vertex.
2. Give the equation for the axis of symmetry.
3. Give the y-intercept.
4. Give the direction that the parabola opens.
5. Identify the x-intercepts of the graph.



6. How many zeros does the function $f(x) = x^2 + 8x + 15$ have?

7. Solve $a^2 - 8a + 20 = 0$

8. Sketch a graph of the inequality $y < -x^2 + 4x - 7$



9. Write an equation for a function with the vertex of (3,5) and is reflected over the x-axis

13. Simplify $(14 - 10i) - (-2 + 10i)$

10. What is the vertex of $y = 2(x - 8)^2 + 3$?

14. Simplify $(3 + i)(2 + 4i)$

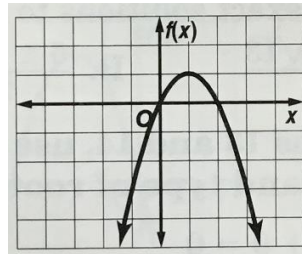
11. What are the transformations of $y = 4(x - 2)^2 + 3$?

15. Simplify $\frac{3i}{2-i}$

12. What are the transformations of $y = -\frac{1}{5}(x + 10)^2$?

16. Simplify i^2

17. What are the transformations of the graph.



18. Write $\frac{6 \pm \sqrt{-18}}{3}$ in simplest form.

19. What are the roots of the equations $y = x^2 - 4x$

Solve each quadratic using any method given. Leave any irrational roots in simplified radical form.

20. $x^2 + 8x + 15 = 0$

21. $3x^2 + 6x + 5 = 0$

22. $2x^2 + 4x + 6 = 0$

23. $x^2 - 13x + 30 = 0$