

Do all of the following problems in your notebook

For the following quadratics, list the transformations, the vertex, and what type of x-intercepts it has. Then, make a sketch of the graph.

1) $y = 5(x + 6)^2 - 3$

2) $y = -2(x - 6)(x + 2)$

3) $y = -x^2 + 6x - 9$

4) $y = \frac{1}{2}(x + 3)^2 - 2$

5) $y = (x - 4)^2 + 1$

Solve the following by factoring, taking the square root of both sides, or the quadratic formula. Use your calculator to check your work. No graph required.

6) $(x - 2)^2 + 10 = 110$

7) $x^2 + 4x - 3 = 0$

8) $x^2 + 4x - 6 = 0$

9) $x^2 - 15 = 35$

10) $3x^2 + 6x + 3 = 0$

11) $4(x + 3)^2 - 3 = 97$

12) $x^2 - 8x = -19$

13) $2x^2 + 4x - 5 = 0$

14) $3x^2 + 18x + 27 = 0$

15) $5x^2 + x - 6 = 3x^2 + 2x + 9$

16) $-x^2 + 3x = -10$

17) $x^2 - 1 = 0$

18) $x^2 + 4x + 4 = 0$

19) $x^2 + 3x = 0$

20) $6x^2 + 11x + 3 = 0$

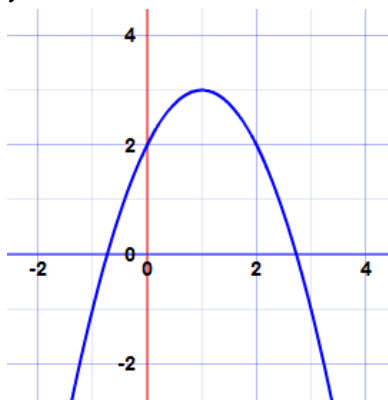
21) $3(x + 2)^2 = 22$

22) $\frac{1}{2}(x - 3)^2 = 18$

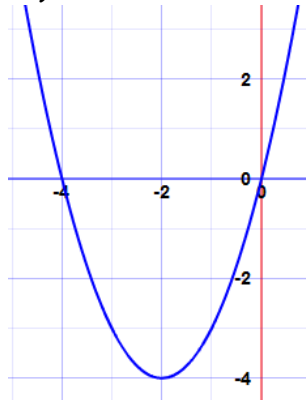
23) $-x^2 + 12 = 0$

Write the quadratic equation from the given graph or the provided information.

24)



25)



26) Transformations: shift left 3, shift up 8, reflect x-axis, vertical stretch by 2

27) Transformations: shift right 1, shift down 2

Write a quadratic equation in standard form with the given roots.

28) $x = -5, x = 1$

29) $x = 2$ Double Root

30) $x = \frac{1}{2}, x = -7$