

Identifying key features of quadratic equations, practice

For each equation, identify the concavity, vertex, axis of symmetry, and y-intercept.

1) $y = -2(x - 3)^2 + 4$

2) $y = (x - 9)^2 - 25$

3) $y = 3(x + 5)^2 - 8$

4) $y = -8(x + 9)^2 + 12$

5) $y = -(x + 16)^2 - 24$

6) $y = 2(x - 7)^2 - 11$

7) $y = -3(x - 21)^2 + 16$

8) $y = 2(x + 3)^2 + 6$

9) $y = -(x + 4)^2 + 12$

10) $y = 5(x - 6)^2 - 7$

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

12) $y = -3(x + 9)^2 - 3$

For each equation, identify the concavity, vertex, axis of symmetry, and y-intercept.

13) $y = -4x^2 + 32x - 3$

14) $y = x^2 + 10x + 20$

15) $y = 2x^2 - 20x + 8$

16) $y = -3x^2 + 30x - 1$

17) $y = -x^2 + 4x - 7$

18) $y = 5x^2 - 60x + 3$

19) $y = -3x^2 - 54x + 8$

20) $y = 6x^2 + 72x - 20$

21) $y = -2x^2 + 44x - 3$

22) $y = 5x^2 - 70x - 9$

23) $y = -4x^2 - 80x + 14$

24) $y = x^2 + 22x - 44$

For each equation, identify the concavity, the roots (x-intercepts), vertex, axis of symmetry, and y-intercept.

25) $y = 3(x - 7)(x + 5)$

26) $y = -(x + 4)(x + 12)$

27) $y = -2(x + 1)(x - 19)$

28) $y = 5(x - 2)(x - 24)$

29) $y = -3(x + 5)(x + 23)$

30) $y = 3(x - 4)(x + 22)$

31) $y = -8(x + 1)(x - 21)$

32) $y = 6(x - 8)(x + 4)$

33) $y = -4(x + 4)(x + 32)$

34) $y = -3(x + 8)(x - 28)$

35) $y = 2(x + 11)(x - 9)$

36) $y = 6(x - 12)(x + 10)$