Quadratic Equations (Key)

Find the solutions to each equation and graph them.

1) $x^2 + 12x + 35 = 0$
$(x + 7)(x + 5)$
$x = -7, -5$

2) $d^2 - 5d - 36 = 0$
$(d - 9)(d+ 4)$
$d = -4, 9$

3) $a^2 + 10a + 25 = 0$
$(a + 5)(a + 5)$
$a = -5$

4) $k^2 - 16 = 0$
$(k - 4)(k + 4)$
$k = 4, -4$

5) $2w^2 + 4w - 48 = 0$
$2(w^2 + 2w - 24)$
$2(w + 6)(w - 4)$
$w = -6, 4$

6) $2c^2 + 7c + 3 = 0$
$(2c + 1)(c + 3)$
$c = -1/2, -3$

7) $3u^2 - 75 = 0$
$3(u^2 - 25)$
$3(u - 5)(u + 5)$
$u = 5, -5$

8) $4f^2 + 16f + 15 = 0$
$(2f + 5)(2f + 3)$
$f = -5/2, -3/2$

9) $m^2 + 8m + 8 = -7$
$+7 \quad +7$
$m^2 + 8m + 15= 0$
$(m + 5)(m + 3)$
$m = -5, -3$

10) $x^2 - x - 30 = 0$
$(x - 6)(x + 5)$
$x = -5, 6$

11) $c^2 + 7c + 12 = 0$
$(c + 4)(c + 3)$
$c = -4, -3$

12) $b^2 + 4b - 21 = 0$
$(b + 7)(b - 4)$
$b = -7, 4$

13) $t^2 - 9 = 0$
$(t - 3)(t + 3)$
$t = 3, -3$

14) $a^2 + 6a + 9 = 0$
$(a + 3)(a + 3)$
$a = -3$

15) $0 = 4k^2 - 12k + 8$
$4(k^2 - 3k + 2)$
$4(k - 2)(k - 1)$
$k = 2, 1$

16) $0 = 3v^2 + 17v + 20$
$(3v + 5)(v + 4)$
$v = -5/3, -4$

17) $2v^2 + 13v - 7 = 0$
$(2v - 1)(v + 7)$
$v = 1/2, -7$

18) $t^2 + 12t + 12 = -8$
$+ 8 \quad +8$
$t^2 + 12t + 20 = 0$
$(t + 10)(t + 2)$
$t = -10, -2$

19) $q^2 - 5q - 24 = 0$
$(q - 8)(q + 3)$

$q = -3, 8$

20) $p^2 - 12p + 36 = 0$
$(p - 6)(p - 6)$

$p = 6$

21) $z^2 - 49 = 0$
$(z - 7)(z + 7)$

$z = 7, -7$

22) $0 = u^2 + 3u - 40$
$(u + 8)(u - 5)$

$u = -8, 5$

23) $5r^2 - 20 = 0$
$5(r^2 - 4)$
$5(r - 2)(r + 2)$

$r = 2, -2$

24) $0 = 9y^2 + 30y + 25$
$(3y + 5)(3y + 5)$

$y = -5/3$

25) $5a^2 + 21a + 4 = 0$
$(5a + 1)(a + 4)$

$a = -1/5, -4$

26) $0 = 6v^2 + v - 2$
$(3v + 2)(2v - 1)$

$v = -2/3, 1/2$

27) $2r^2 - 9r = 5$
$- 5 - 5$
$2r^2 - 9r - 5 = 0$
$(2r + 1)(r - 5)$

$r = -1/2, 5$

28) $0 = x^2 - 12x - 28$
$(x - 14)(x + 2)$

$x = 14, -2$

29) $16t^2 + 24t + 9 = 0$
$(4t + 3)(4t - 3)$

$t = -3/4, 3/4$

30) $3v^2 - 7v + 4 = 0$
$(3v - 4)(v - 1)$

$v = 4/3, 1$

31) $0 = 3m^2 + 24m + 36 = 0$
$3(m^2 + 8m + 12)$
$3(m + 6)(m + 2)$

$m = -6, -2$

32) $0 = b^2 - 81$
$(b - 9)(b + 9)$

$b = 9, -9$

33) $2v^2 - 9v - 5 = 0$
$(2v + 1)(v - 5)$

$v = -1/2, 5$

34) $0 = d^2 + 4d + 4$
$(d + 2)(d + 2)$

$d = -2$

35) $3m^2 - 48 = 0$
$3(m^2 - 16)$
$3(m - 4)(m + 4)$

$m = 4, -4$

36) $6w^2 - 7w - 5 = 5$
$6w^2 - 7w - 10 = 0$
$(6w + 5)(w - 2)$

$w = -5/6, 2$