

19. 0; one real: $x = -6$

21. 400; two real: $n = 3$ and $n = -2$

23. -135 ; two imaginary: $x = \frac{5 \pm 3i\sqrt{15}}{8}$

25. 0; one real: $x = -4$

27. A

29. C; The discriminant is negative, so the graph has no x -intercepts.31. A; The discriminant is positive, so the graph has two x -intercepts. The y -intercept is -9 .

33. The i was left out after taking the square root;
$$x = \frac{-10 \pm \sqrt{-196}}{2} = \frac{-10 \pm 14i}{2} = -5 \pm 7i$$

35. *Sample answer:* $a = 1$ and $c = 5$; $x^2 + 4x + 5 = 0$

37. *Sample answer:* $a = 2$ and $c = 4$; $2x^2 - 8x + 4 = 0$

39. *Sample answer:* $a = 5$ and $c = -5$; $5x^2 + 10x + 5 = 0$

41. $-5x^2 + 8x - 12 = 0$

43. $-7x^2 + 4x - 5 = 0$

45. $3x^2 + 4x + 1 = 0$

47. $x = \pm 2\sqrt{2}$; *Sample answer:* square roots; The equation can be written in the form $u^2 = d$.49. $x = 9$ and $x = -3$; *Sample answer:* factoring; The equation can be factored.51. $x = 3$ and $x = 4$; *Sample answer:* factoring; The equation can be factored.53. $x = 5 \pm i\sqrt{2}$; *Sample answer:* completing the square; Factor out 5, and $a = 1$ and b is an even number.55. $x = \frac{-9 \pm \sqrt{33}}{8}$; *Sample answer:* Quadratic Formula; $a \neq 1$, b is not an even number, the equation cannot be factored, and it cannot be easily written in the form $u^2 = d$.57. $x = \frac{-1 \pm \sqrt{5}}{2}$; *Sample answer:* Quadratic Formula; b is not an even number, the equation cannot be factored, and it cannot be easily written in the form $u^2 = d$.

59. $x = 6$

69. 3.5 ft