

$$35. \quad g^2 - 5g = 24$$

$$g^2 - 5g + \frac{25}{4} = 24 + \frac{25}{4}$$

$$(g - \frac{5}{2})^2 = \frac{96}{4} + \frac{25}{4}$$

$$\sqrt{(g - \frac{5}{2})^2} = \pm \sqrt{\frac{121}{4}}$$

$$g - \frac{5}{2} = \pm \frac{11}{2}$$

$$g = \frac{5}{2} \pm \frac{11}{2} \begin{cases} \frac{16}{2} = 8 \\ -\frac{6}{2} = -3 \end{cases}$$

$$36. \quad v^2 + 7v = 44$$

$$v^2 + 7v + \frac{49}{4} = 44 + \frac{49}{4}$$

$$(v + \frac{7}{2})^2 = \frac{176}{4} + \frac{49}{4}$$

$$\sqrt{(v + \frac{7}{2})^2} = \pm \sqrt{\frac{225}{4}}$$

$$v + \frac{7}{2} = \pm \frac{15}{2}$$

$$v = -\frac{7}{2} \pm \frac{15}{2} \begin{cases} \frac{8}{2} = 4 \\ -\frac{22}{2} = -11 \end{cases}$$

$$37. \quad 2x^2 + 12x - 32 = 0$$

$$2(x^2 + 6x + 9) = 32 + 18$$

$$\frac{2(x+3)^2}{2} = \frac{50}{2}$$

$$\sqrt{(x+3)^2} = \pm \sqrt{25} \begin{cases} x = -8 \\ x = 2 \end{cases}$$

$$x + 3 = \pm 5$$

$$38. \quad 4m^2 - 40m + 56 = 0$$

$$4(m^2 - 10m + 25) = -56 + 100$$

$$\frac{4(m-5)^2}{4} = \frac{44}{4}$$

$$\sqrt{(m-5)^2} = \pm \sqrt{11} \quad (m = 5 \pm \sqrt{11})$$

$$m - 5 = \pm \sqrt{11}$$

$$39. \quad 3d^2 - 24d = 3$$

$$3(d^2 - 8d + 16) = 3 + 48$$

$$\frac{3(d-4)^2}{3} = \frac{51}{3}$$

$$\sqrt{(d-4)^2} = \pm \sqrt{17}$$

$$d - 4 = \pm \sqrt{17} \quad (d = 4 \pm \sqrt{17})$$

$$40. \quad 4y^2 + 8y - 36 = 0$$

$$4(y^2 + 2y + 1) = 36 + 4$$

$$4(y+1)^2 = 40$$

$$(y+1)^2 = 10$$

$$\sqrt{(y+1)^2} = \pm \sqrt{10}$$

$$y + 1 = \pm \sqrt{10}$$

$$y = -1 \pm \sqrt{10}$$

$$41. \quad 2x^2 - 10x - 20 = 8$$

$$2(x^2 - 5x + \frac{25}{4}) = 28 + \frac{25}{2}$$

$$2(x - \frac{5}{2})^2 = \frac{56}{2} + \frac{25}{2}$$

$$\frac{1}{2} \cdot 2(x - \frac{5}{2})^2 = \frac{81}{2} \cdot \frac{1}{2}$$

$$(x - \frac{5}{2})^2 = \frac{81}{2} \cdot \frac{1}{2}$$

$$x - \frac{5}{2} = \pm \sqrt{\frac{81}{4}}$$

$$x - \frac{5}{2} = \pm \frac{9}{2}$$

$$x = \frac{5}{2} \pm \frac{9}{2}$$

$$x = \frac{5}{2} + \frac{9}{2} = \frac{14}{2} \quad x = \frac{5}{2} - \frac{9}{2} = -\frac{4}{2}$$

$$x = 7 \quad x = -2$$