1. $x^2 + 3x - 28 = 0$

$ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$a = 1 \quad b = 3 \quad c = -28$

$$x = \frac{-3 \pm \sqrt{3^2 - 4(1)(-28)}}{2(1)}$$

$$x = \frac{-3 + \sqrt{121}}{2} \qquad x = \frac{-3 - \sqrt{121}}{2}$$

$$x = \frac{8}{2} \qquad x = -\frac{14}{2}$$

$x = 4$ $\qquad$ $x = -7$

2. $3.23x^2 + 21.32x - 50.44 = 0$

$3.23x^2 \cdot 100 + 21.32x \cdot 100 - 50.44 \cdot 100 = 0 \cdot 100$

$323x^2 + 2132x - 5044 = 0$

$ax^2 + bx + c = 0$

$a = 323 \quad b = 2132 \quad c = -5044$

$$x = \frac{-2132 \pm \sqrt{2132^2 - 4(323)(-5044}}{2(323)}$$

$$x = \frac{-2132 \pm \sqrt{2132^2 - 4(323)(-5044)}}{646}$$

$$x = \frac{-2132 \pm \sqrt{11062272}}{646}$$

~~[illegible]~~

$$x = \frac{-2132 \pm 32\sqrt{10803}}{646}$$

$$x = \frac{2(8\sqrt{10803} - 533)}{323}$$

$$x = \frac{-2132 - 32\sqrt{10803}}{646}$$

$$x = -\frac{2(533 + 8\sqrt{10803}}{323}$$

3. $121x^2 + 154x + 56 = 0$

$ax^2 + bx + c = 0$

$a = 121 \quad b = 154 \quad c = 56$

$$x = \frac{-154 \pm \sqrt{154^2 - 4(121)(56)}}{2(121)}$$

$$x = \frac{-154 \pm \sqrt{-3388}}{242}$$

$$x = \frac{-154 + \sqrt{3388}i}{242}$$

$$x = \frac{22(-7 + i\sqrt{7})}{242}$$

$$x = \frac{-7 + i\sqrt{7}}{11}$$

$$x = -\frac{7}{11} + \frac{\sqrt{7}}{11}i$$

$$x = \frac{-154 - \sqrt{3388}i}{242}$$

$$x = \frac{22(-7 - i\sqrt{7})}{242}$$

$$x = \frac{-7 - i\sqrt{7}}{11}$$

$$x = -\frac{7}{11} - \frac{\sqrt{7}}{11}i$$

4. $bx^2 + 11wx - 6\pi = 0$

$A = b \quad B = 11w \quad C = -6\pi$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-11w \pm \sqrt{11w^2 - 4(b)(-6\pi)}}{2(b)}$$

$$x = \frac{-11w + \sqrt{(11w)^2 + 4b \cdot 6\pi}}{2b}$$

$$x = \frac{-11w + \sqrt{24\pi b + (11w)^2}}{2b}$$

$$x = \frac{-11w + \sqrt{121w^2 + 24\pi b}}{2b}$$

$$x = \frac{-11w \pm \sqrt{11w^2 - 4(b)(-6\pi)}}{2(b)}$$

$$x = \frac{-11w - \sqrt{(11w)^2 + 4b \cdot 6\pi}}{2b}$$

$$x = \frac{-11w - \sqrt{24\pi b + (11w)^2}}{2b}$$

$$x = \frac{-11w - \sqrt{121w^2 + 24\pi b}}{2b}$$

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

$$x^2 - 5x + \left(\frac{5}{2}\right)^2 - \left(\frac{5}{2}\right)^2 + 5 = 0$$

$$\left(x^2 - 5x + \frac{25}{4}\right) - \frac{25}{4} + 5 = 0$$

$$\left(x - \frac{5}{2}\right)^2 - \frac{25}{4} + \frac{20}{4} = 0$$

$$\left(x - \frac{5}{2}\right)^2 - \frac{5}{4} = 0$$

$$\left(x - \frac{5}{2}\right)^2 = \frac{5}{4}$$

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

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

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

8. $x^2 - 6x - 11 = 0$

$x^2 - 6x + 9 - 9 - 11 = 0$

$(x-3)^2 - 20 = 0$

$(x-3)^2 = 20$

$x - 3 = 2\sqrt{5}$

$x = 3 \pm 2\sqrt{5}$

9. $5x^2 + 2x + 11 = 0$

$$\frac{5x^2}{5} + \frac{2x}{5} = -\frac{11}{5}$$

$$x^2 + \frac{2}{5}x = -\frac{11}{5}$$

$$x^2 + \frac{2}{5}x + \left(\frac{2}{5}\cdot\frac{1}{2}\right)^2 = -\frac{11}{5} + \left(\frac{2}{5}\cdot\frac{1}{2}\right)^2$$

$$x^2 + \frac{2}{5}x + \frac{1}{25} = -\frac{11}{5} + \frac{1}{25}$$

$$\left(x + \frac{1}{5}\right)^2 = -\frac{55}{25} + \frac{1}{25}$$

$$\left(x + \frac{1}{5}\right)^2 = -\frac{54}{25}$$

$$x + \frac{1}{5} = \sqrt{-\frac{54}{25}}$$

$$x = -\frac{1}{5} + i\frac{3\sqrt{6}}{5}$$

$$x = -\frac{1}{5} \pm i\frac{3\sqrt{6}}{5}$$

5. $x^2 + 3x - 28 = 0$

$x^2 + 7x - 4x - 28 = 0$

$(x-4)(x+7) = 0$

$x - 4 = 0 \qquad x + 7 = 0$

$x = 4 \qquad x = -7$

6. $30x^2 + 179x - 140 = 0$

$30x^2 + 200 - 21x - 140 = 0$

$(10x - 7)(3x + 20)$

$10x - 7 = 0 \qquad 3x + 20 = 0$

$10x = 7 \qquad 3x = -20$

$x = \frac{7}{10} \qquad x = -\frac{20}{3}$

10. $3x^2 - 4x - 4 = 0$

$3x^2 - 4x = 4$

$x^2 - \frac{4}{3}x = \frac{4}{3}$

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

$x^2 - \frac{4}{3}x + \frac{4}{9} = \frac{4}{3} + \frac{4}{9}$

$x^2 - \frac{4}{3}x + \frac{4}{9} = \frac{16}{9}$

$(x - \frac{2}{3})^2 = \frac{16}{9}$

$x - \frac{2}{3} = \pm \frac{4}{3}$

$x = \frac{2}{3} + \frac{4}{3}$

$x = \frac{6}{3} = 2$

$x = \frac{2}{3} - \frac{4}{3}$

$x = -\frac{2}{3}$