Review: Solving Quadratics

Method 1: (Factoring)

Trinomial Decomp.

$1 \times 6 = 6$

$1 + 6 = 7$

1×6

2×3

① b) $3x^2 + 7x + 2 = 0$

$(3x^2 + 1x) + (6x + 2) = 0$

$x(3x+1) + 2(3x+1) = 0$

$(3x+1)(x+2) = 0$

$3x+1=0$ | $x+2=0$

$3x = -1$ | $x = -2$

$x = -\frac{1}{3}$

Method 2: Completing the Square:

① b) $3x^2 + 7x + 2 = 0$

$\frac{3x^2}{3} + \frac{7x}{3} = -\frac{2}{3}$

$x^2 + \frac{7}{3}x = -\frac{2}{3}$

$x^2 + \frac{7}{3}x + \frac{49}{36} = -\frac{2}{3} + \frac{49}{36}$

$\frac{7}{3} \times \frac{1}{2} = \left(\frac{7}{6}\right)^2$

$= \frac{49}{36}$

$\left(x + \frac{7}{6}\right)^2 = -\frac{24}{36} + \frac{49}{36}$

$\left(x + \frac{7}{6}\right)^2 = \frac{25}{36}$

Square Root both sides

$x + \frac{7}{6} = \pm\sqrt{\frac{25}{36}}$

$x + \frac{7}{6} = \pm\frac{5}{6}$

$x = -\frac{7}{6} \pm \frac{5}{6}$

$x = -\frac{7}{6} - \frac{5}{6}$

$x = -\frac{12}{6}$

$x = -2$

$x = -\frac{7}{6} + \frac{5}{6}$

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

$x = -\frac{1}{3}$