[EXPLORATION 2.2.2]

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

$$ax^2+bx+c=0$$

$$ax^2+bx = -c$$

$$\left(\frac{\frac{b}{a}}{2}\right)^2 = \left(\frac{b}{a}\cdot\frac{1}{2}\right)^2 = \left(\frac{b}{2a}\right)^2 = \frac{b^2}{4a^2}$$

$$x^2+\frac{b}{a}x+\left(\frac{\frac{b}{a}}{2}\right)^2 = -\frac{c}{a}+\left(\frac{\frac{b}{a}}{2}\right)^2$$

$$x^2+\frac{b}{a}x+\frac{b^2}{4a^2} = -\frac{c}{a}+\frac{b^2}{4a^2}$$

$$-\frac{c}{a}+\frac{b^2}{4a^2} \rightarrow \frac{4a-c}{4a}\,a + \frac{b^2}{4a^2}$$

$$\left(x+\frac{b}{2a}\right)^2 = \frac{b^2}{4a^2}-\frac{4ac}{4a^2}$$

$$\sqrt{\left(x+\frac{b}{2a}\right)^2} = \sqrt{\frac{b^2-4ac}{4a^2}}$$

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

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

$$-\frac{b}{2a}$$

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