

Chapter 4 Review #22

Cut out and arrange the algebraic steps and explanations in the order necessary to arrive at the quadratic formula.

Algebraic Steps

Explanations

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

Take the square root of both sides.

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

Subtract c from both sides.

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

Divide both sides by a .

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

Complete the square.

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

Factor the perfect square trinomial.

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

Solve for x .

