

Name: Key

List the 4 ways to solve a quadratic equation:

- 1 a) Factoring $\frac{a \cdot c = |b|}{b}$
- 4 b) CTS $y = ax^2 + bx + _ + c - _$
- 2 c) Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
- 3 d) $\sqrt{\quad}$ method

Put a ranking of 1, 2, 3, or 4 next to each with 1 being the method you prefer the most and 4 being the method you least prefer.

Choose one method and solve the quadratic equation below. Whichever method you use, be sure to show the appropriate work.

$$x^2 + 2x - 24 = 0$$

a·c = -24	b = 2
-1·24	23
-2·12	10
-3·8	5
-4·6	2

$$(x-4)(x+6) = 0$$

$$x = 4$$

$$x = -6$$

$$a = 1$$

$$b = 2$$

$$c = -24$$

$$x = \frac{-2 \pm \sqrt{(2)^2 - 4(1)(-24)}}{2(1)}$$

$$x = \frac{-2 \pm \sqrt{4 + 96}}{2} = \frac{-2 \pm \sqrt{100}}{2}$$

$$x = \frac{-2 \pm 10}{2} \rightarrow x = \frac{-2+10}{2} = \frac{8}{2} = 4$$

$$x = \frac{-2-10}{2} = \frac{-12}{2} = -6$$

$$0 = x^2 + 2x + \frac{1}{4} - 24 - \frac{1}{4}$$

$$\left(\frac{2}{2}\right)^2 = \left(\frac{2}{2}\right)^2 = (1)^2 = 1$$

$$0 = (x+1)^2 - 25$$

$$\sqrt{(x+1)^2} = \sqrt{25}$$

$$x+1 = \pm 5$$

$$-1 \quad -1$$

$$x = -1 \pm 5$$

$$x = -1+5 = 4$$

$$x = -1-5 = -6$$