

Name:

Apply the quadratic formula

Factoring Fridays

1. Quadratic formula solves equations like $2x^2 + 1x - 3 = 0$, generally:

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

Substitute into

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

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

$$= \frac{-1 \pm \sqrt{1 + 24}}{4}$$

$$= \frac{-1 \pm 5}{4}$$

$$x = 1 \text{ or } -\frac{3}{2} \text{ (there are two answers)}$$

- (a) As a check, substitute these two values for x into $2x^2 + 1x - 3 = 0$.

- (b) Apply the quadratic formula to $2x^2 - 3x - 5 = 0$

Distribute or factor each expression.

(c) $x(x + 1)$

Factor each expression

(h) $x^2 + 3x$

(d) $(x + 5)(x + 1)$

(i) $x^2 + 12x + 11$

(e) $(x - 7)(x + 7)$

(j) $x^2 + 4x + 3$

(f) $(x + 1)(x + 4)$

(k) $x^2 + 6x + 9$

(g) $(x + 5)(x - 5)$

(l) $x^2 + 7x + 6$

Name:

(m) Given $f(x) = -x + 1$. Simplify $f(5)$.

(n) Find $g(x) = \frac{1}{2}x - 3$ for $x = 6$.

(o) Given $h(x) = \frac{2x - 3}{7}$. Evaluate the expression $h(-2)$.

Write each expression as a polynomial in standard form.

(p) $x^2 + 3x - 6 - 3x^2 - x + 14$

(q) $2(2a^2 - 2a + 3) - 2(5a^2 - 2a - 5)$

(r) $x^2 + 2x - x^2 + 3x^2 - 17$

Solve for the value of x .

(s) $6x = 12$

(t) $2x = 4\pi$

(u) $3(2x - 4) = 3(x + 2) + 3$

(v) $2x - 5 = \frac{1}{3}(12 - 3x)$

(w) $x = \frac{1}{3}x + 6$

Name:

What is the slope and y -intercept of each equation?

(x) $y = -2x - 3.5$

(y) $2y = 8x + 4$

(z) $9x - 3y = 6$

Apply the distributive property

() $x(x + 5)$

() $3x(x^2 - 2x + 11)$

() $x(x^2 - 4x + 5) + 21$

() $(x + 1)(x + 3)$

() $(x + 2)(x + 3)$

() $(x + 1)(x + 4)$