

You Try: Factor GCF

1. $2x^2 + 6$

$2(x^2 + 3)$

2. $9x^2 - 3$

$3(3x^2 - 1)$

3. $12x^3 - 6x^2 + 9x$

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

4. $2x + 3$

prime

5. $6x^2y + 2xy$

$2xy(3x + 1)$

6. $-2x^2 + 4x + 8$

$-2(x^2 - 2x - 4)$

You Try: Factor by Grouping

1. $(x^2 + 2x) + (4x + 8)$

$x(x+2) + 4(x+2)$

$(x+4)(x+2)$

2. $(5x^2 - x) + (20x - 4)$

$x(5x-1) + 4(5x-1)$

$(x+4)(5x-1)$

3. $(3x^2 + 6x) + (-18x - 36)$

$3((x^2 + 2x) + (-6x - 12))$

$3(x(x+2) - 6(x+2))$

$3(x-6)(x+2)$

You Try: Factor Binomials and Trinomials

1. $x^2 + 5x + 6$

$(x^2 + 3x) + (2x + 6)$
 $x(x+3) + 2(x+3)$

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

2. $2x^2 + 8x - 10$

$2(x^2 + 4x - 5)$
 $2((x^2 - 1x) + (5x - 5))$

$2(x(x-1) + 5(x-1))$

$2(x+5)(x-1)$

3. $2x^2 + 11x + 15$

$(2x^2 + 5x) + (6x + 15)$
 $x(2x+5) + 3(2x+5)$

$(x+3)(2x+5)$

4. $x^2 - 8x + 15$

$(x^2 - 3x) + (-5x + 15)$
 $x(x-3) - 5(x-3)$

$(x-5)(x-3)$

5. $x^2 - 16$

$(x^2 - 4x) + (4x - 16)$
 $x(x-4) + 4(x-4)$

$(x+4)(x-4)$

6. $-18x^2 + 39x + 15$

$-3(6x^2 - 13x - 5)$
 $-3((6x^2 - 15x) + (2x - 5))$

$-3(3x+1)(2x-5)$

GCF Practice

Complete.

1. $8m - 6 = 2(4m - 3)$

2. $36a^2 + 24b^2 = 12(3a^2 + 2b^2)$

3. $12x^3y - 15xy = 3xy(4x^2 - 5)$

4. $5a^2b - 10a^2b^2 = 5a^2b(1 - 2b)$

Factor each expression.

1. $5a^2 - 15$

$5(a^2 - 3)$

2. $7x + 49$

$7(x + 7)$

3. $2y + 6xy$

$2y(1 + 3x)$

4. $8ax - 56a$

$8a(x - 7)$

5. $36xy^2 - 6x^2y$

$6xy(6y - 1x)$

6. $81 - 36xy$

$9(9 - 4xy)$

7. $5c^3 - 2c^2$

$c^2(5c - 2)$

8. $-34x^4y^3 - 17x^2y^5$

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

9. $10m^2 + 5m$

$5m(2m + 1)$

Grouping Practice

Factor each expression.

1. $(6x^2 - 9x)(-4x + 6)$

$3x(2x - 3) - 2(2x - 3)$

$(3x - 2)(2x - 3)$

2. $(2x^2y + 6xy)(-x - 3)$

$2xy(x + 3) - 1(x + 3)$

$(2xy - 1)(x + 3)$

3. $(6xy^2 - 3xy)(8y - 4)$

$3xy(2y - 1) + 4(2y - 1)$

$(3xy + 4)(2y - 1)$

4. $(8x^2 + 2xy)(2x + 3y)$

$2x(4x + y) + 3(4x + y)$

$(2x + 3)(4x + y)$

5. $(p^2q + pq)(-p - 1)$

$pq(p + 1) - 1(p + 1)$

$(pq - 1)(p + 1)$

6. $(6x^3 - 4x^2)(9x - 6)$

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

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

Binomial/Trinomial Practice

Factor each expression.

1. $6x^2 - 13x + 6$ $\frac{ac}{36} \mid \frac{b}{-13}$

$(6x^2 - 9x)(-4x + 6)$ $-9, -4$

$3x(2x - 3) - 2(2x - 3)$

$(3x - 2)(2x - 3)$

4. $x^2 - 3x - 54$ $\frac{ac}{-54} \mid \frac{b}{-3}$

$(x^2 - 9x) + (6x - 54)$ $-9, 6$

$x(x - 9) + 6(x - 9)$

$(x + 6)(x - 9)$

2. $2x^2 + 5x + 2$ $\frac{ac}{4} \mid \frac{b}{5}$

$(2x^2 + 4x) + (1x + 2)$ $4, 1$

$2x(x + 2) + 1(x + 2)$

$(2x + 1)(x + 2)$

5. $4x^2 + 12x + 6$

$2(2x^2 + 6x + 3)$

3. $9x^2 - 4$ $\frac{ac}{-36} \mid \frac{b}{0}$

$(9x^2 - 6x) + (6x - 4)$ $6, -6$

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

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

6. $6x^2 + 5x - 6$ $\frac{ac}{-36} \mid \frac{b}{5}$

$(6x^2 - 4x) + (9x - 6)$ $9, -4$

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

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