

Factoring Messy Trinomials

1. Factor each of the following completely.

a. $2x^2 + 5x - 3$

b. $3x^2 + x - 2$

c. $4x^2 + 11x + 6$

d. $4x^2 + 8x - 5$

e. $-3 + x - 2x^2$

f. $6x^2 + 5x - 6$

g. $8x^2 + 14x + 5$

h. $7x^2 - 10x + 3$

i. $12x^2 + x - 2$

j. $12x^2 + 16x + 5$

k. $9x^2 + 3x - 2$

l. $3 - 7x - 2x^2$

m. $16x^2 + 18x - 9$

n. $16x^2 - 8x - 3$

o. $20 + 19x - 6x^2$

p. $12x^2 + 5x - 25$

q. $4x^2 + 16x + 15$

r. $10x^2 + 13x - 3$

s. $10x^2 - 7x - 3$

t. $24x^2 - 2x - 7$

2. Factor each of the following completely.

a. $4x^2 - 14x - 30$

b. $5 - 13x - 6x^2$

c. $24x^2 - 28xy + 8y^2$

d. $6a^3 - 20a^2 - 16a$

e. $12a^2 + 9ab - 30b^2$

f. $15x^2 + 10xy - 25y^2$

g. $\frac{1}{2}x^2 + \frac{3}{2}x + 1$

h. $\frac{1}{3}x^2 + 2x + 3$

3. Factor each of the following completely.

a. $12x^4 + x^2 - 6$

b. $6x^4y^4 + 7x^2y^2 - 10$

c. $10x^4 + 33x^2y - 7y^2$

d. $12x^4y^3 + 17x^2y^2 - 40y$

4. Factor each of the following completely.

a. $2(x-1)^2 - 5(x-1) - 3$

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

c. $8(x-5)^2 + 14(x-5) - 15$

ANSWERS

1a. $(2x-1)(x+3)$

1c. $(x+2)(4x+3)$

1e. not possible

1g. $(2x+1)(4x+5)$

1i. not possible

1k. $(3x-1)(3x+2)$

1m. $(8x-3)(2x+3)$

1o. $(4-x)(6x+5)$

1q. $(2x+5)(2x+3)$

1s. $(10x+3)(x-1)$

1b. $(3x-2)(x+1)$

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

1f. $(3x-2)(2x+3)$

1h. $(7x-3)(x-1)$

1j. $(2x+1)(6x+5)$

1l. not possible

1n. $(4x-3)(4x+1)$

1p. $(4x-5)(3x+5)$

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

1t. $(12x-7)(2x+1)$

2a. $2(x-5)(2x+3)$

2c. $4(2x-y)(3x-2y)$

2e. $3(4a-5b)(a+2b)$

2g. $\frac{1}{2}(x+1)(x+2)$

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

2d. $2a(a-4)(3a+2)$

2f. $5(3x+5y)(x-y)$

2h. $\frac{1}{3}(x+3)(x+3)$

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

3b. $(x^2y^2+2)(6x^2y^2-5)$

3c. $(2x^2+7y)(5x^2-y)$

3d. $y(3x^2y+8)(4x^2y-5)$

4a. $(2x-1)(x-4)$

4b. $(5x+11)(x+1)$

4c. $(4x-23)(2x-5)$