

1. Add $6x^2 + 8x + 4$ and $-7x^2 - 7x - 10$.

2. Subtract $-x^3 - 12$ from $2x^2 - 7x + 10$.

3. Subtract $4x^2 + 6x + 9$ from the sum of $-3x^2 - 9x + 6$ and $-2x^2 + 6x - 7$.

4. Simplify $3x^2 - [4x^2 - 2x - (x^2 - 3x + 6)]$

5. Simplify

a.

$$\left(\frac{2}{5}xy^2\right)\left(\frac{3}{4}x^2y^4\right)$$

b.

$$(-3ab^2)(-a^2b)(4a^4b^5)$$

c.

$$(-4a^3b^2c)^3$$

d.

$$\frac{56x^5y^4}{-7x^2y^3}$$

e.

$$\frac{72x^2y^4z^3}{-8x^3y^2z^3}$$

f.

$$\frac{3a^2b}{12a^3b^5}$$

6. Find each product.

a. $(y + 3)(y - 9)$

b. $(5x - 3)^2$

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

d. $(x - 2)(x^2 - 5x + 7)$

e. $(2x^2 - 3x + 1)(x^2 + 2x - 5)$

7. Factor completely

a. $27xy - 36yz$

b. $8x^5y^3 - 6x^4y^5 + 12x^2y^3$

c. $x(y + 2) - 7(y + 2)$

d. $2bx + 2by + cx + cy$

e. $x^2 - 2x + 5x - 10$