

Let's begin with a review of *like terms*, the most important concept in this unit.

Like Terms:

Combining Like Terms

We have a several-step process for combining like terms:

- If applicable, distribute to remove parentheses.
- Circle each like term and the sign to its left.
- Add each circled like term (including the sign).
- Repeat the last two steps with a different set of like terms, until all terms are used.

Let's simplify some expressions together:

• $5x - 3y - 7x + 8y$ • $3(2x + 4) + 5x - 15$ • $-3x^2 + 4x - 6x^2$

• $-7x + 4y - 2 + 8x - 12y$ • $-2(x + 3)$ • $0.5(10x - 4y) - 3(2x - 3y)$

Now, try some on your own.

1. Simplify each expression by distributing and combining like terms.

(a) $-6a + 2b - 2a - 3b$

(b) $6x + 3y - 8x - 2y$

(c) $-2x + 3x - 5x + 7x$

(d) $10a - 2b - 4a - 4b$

(e) $-5(2x - 3)$

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

(g) $0.5(8x - 4)$

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

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

(j) $-3(2x - 4) - (5x + 1)$

$$\text{(k)} \quad -5(2x - 3y) - \frac{1}{2}(4x + 2y)$$

$$\text{(l)} \quad 0.5(6x - 2y) - 2(2x - 5y)$$

$$\text{(m)} \quad 8 - 3(4x + 2) - 6x$$

$$\text{(n)} \quad -4(3x - 5) - (5x + 1)$$

$$\text{(o)} \quad 6 + 3(5x - 1) - 4x$$

$$\text{(p)} \quad -3(6x + 2) - (4x + 1)$$

$$\text{(q)} \quad -5(3x - 2y) - \frac{1}{2}(4x + 2y)$$

$$\text{(r)} \quad 0.5(2x - 4y) - 3(5x + 2y)$$

2. Multiple Choice: simplify $7a + 5b - 13a - 11b$

(a) $-6a - 6b$

(b) $-6a + 4b$

(c) $2a + 4b$

(d) $6a - 5b$

3. Multiple Choice: simplify $-6x + 5y - 2 + 7x - 10y - 3$

(a) $13x - 5y + 5$

(b) $13x + 15y + 5$

(c) $x - 5y - 5$

(d) $x + 5y - 5$

4. Multiple Choice: simplify $0.5(6x - 2y) - 3(3x - 2y)$

(a) $-6x - 5y$

(b) $-12x - 5y$

(c) $12x + 7y$

(d) $-6x + 5y$

5. Multiple Choice: simplify $-5(2x - 4y) - \frac{1}{2}(6x + 2y)$

(a) $-13x - 21y$

(b) $-13x + 19y$

(c) $-7x + 20y$

(d) $13x + 21y$