

Worksheet 4-4: Collecting Like Terms

In Algebra, we can only add or subtract **like terms**.

The variables are used to identify like terms. The coefficients are used for adding or subtracting.

Examples:



$$6 \text{ (apple)} + 2 \text{ (pear)} - 4 \text{ (apple)} + 3 \text{ (pear)} =$$

$$5x + 2y - 4y + 7x =$$

Practice:

1. **Simplify** the following by adding or subtracting the **coefficients** of the like terms while keeping the variable as it is.

(a) $2l + 3l$

(b) $-5m + 2m$

(c) $-3x - 5x$

(d) $4r - r$

(e) $-y - y - y$

(f) $-6p - 3p + 5p$

(g) $2y^2 + 8y + 7y^2 - 2y$

(h) $12x^2 - 5x - 6x^2 - x$

(i) $3m^3 - 2m^2 + 4m^3 + 5m^2$

(j) $5s - 1 + 2s - 3$

(k) $0.5a + 7.2a - 3.7a$

(l) $\frac{3}{4}w^2 - \frac{2}{3}w^2 + \frac{1}{2}w^2$

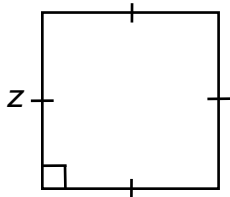
2. Simplify, and then evaluate using the given value.

(a) $2a + 8a - 1$, when $a = 2$.

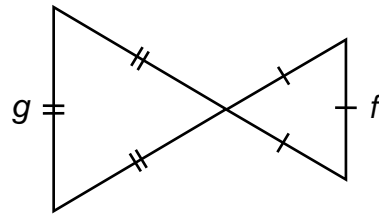
(b) $7t - 3t$, when $t = 3$.

3. Write a simplified algebraic expression for the perimeter of the following figures.

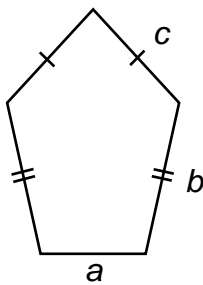
(a)



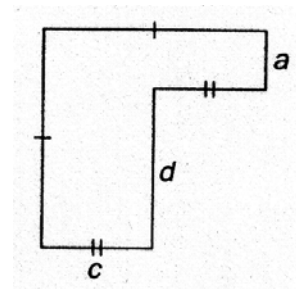
(b)



(c)



(d)



Answers: 1. (a) $5l$, (b) $-3m$, (c) $-8x$, (d) $3r$, (e) $-3y$, (f) $-4p$, (g) $9y^2 + 6y$, (h) $6x^2 - 6x$,
 (i) $7m^3 + 3m^2$, (j) $7s - 4$, (k) $4a$, (l) $\frac{7}{12}w^2$; **2.** (a) $10a - 1; 19$, (b) $4t; 12$;
3. (a) $4z$, (b) $3f + 3g$, (c) $a + 2b + 2c$, (d) $a + 6c + d$.