

# ALGEBRA: Collecting Like Terms

## Practice

Simplify.

1.  $3x + 5x$
3.  $-10b + 3b$
5.  $11m + 10m$
7.  $-21s + 12s$

2.  $11t - t$
4.  $-12y - y$
6.  $15p - 9p$
8.  $-13a - 10a$

Simplify.

9.  $6r + 4r - r$
11.  $9p - p - 6p$
13.  $11a - 10a - 5a$
15.  $-8q - 9q + 10q$

Simplify.

10.  $2t + 3t - t$
12.  $-w + 6w - w$
14.  $-5y - 2y + 9y$
16.  $16n + n - 17n$
17.  $3t + 5 - 2t$
19.  $2a - b + 3a$
21.  $8y - 2z + 7y$
23.  $-2r - 3s + 6r$
18.  $2x - 5x - 7$
20.  $-4x + y - 6x$
22.  $-9p - 10q + 8p$
24.  $-j + 7k - 3j$

Simplify.

25.  $5c + d - 2c - d$
26.  $7p - q + p - 2q$
27.  $3j + k - 5j - 2k$
28.  $8a - 2b - 6a - 3b$
29.  $-r + s + 2r - 2s$
30.  $-5x + 5y + 5x - y$

Simplify.

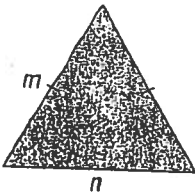
31.  $5x + 10 + 5y - 3x + 1$
32.  $3a - 4b - 5 + a - b$
33.  $-7t + 2 + 8r + 9r - 8t$
34.  $-8 - 3z + 9x - 11 - 6z$
35.  $8r - 11 - 18q + 5p + 7q$
36.  $-4w + 7c - 8x - 9w - 3c$
37.  $13j - 18d - 5d + 2j + 2c$
38.  $-q + 7q + 11n + 11p - 8q$

Simplify.

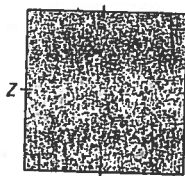
39.  $-p + 5q - 8r - q + 3p + 9r + 1$
40.  $-2z + 3y - 10x - 4y + 4z - 3x$
41.  $5q - 9s - 8r + 8q - 7r + 13s$
42.  $-10 - a + 6c - 11 - 9c + 8a - d$

44. Write an expression for each perimeter in 2 different ways.

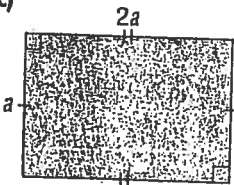
a)



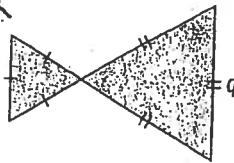
b)



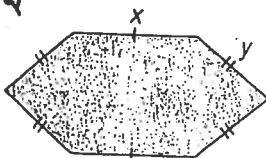
c)



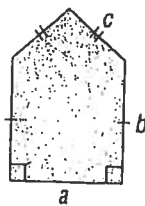
d)



e)



f)



## Answers

- Practice 1.  $8x$  2.  $10t$  3.  $-7b$  4.  $-13y$  5.  $21m$  6.  $6p$   
 7.  $-9s$  8.  $-23a$  9.  $9r$  10.  $4t$  11.  $2p$  12.  $4w$  13.  $-4a$   
 14.  $2y$  15.  $-7q$  16.  $0$  17.  $t + 5$  18.  $-3x - 7$  19.  $5a - b$   
 20.  $-10x + y$  21.  $15y - 2z$  22.  $-p - 10q$  23.  $4r - 3s$   
 24.  $-4j + 7k$  25.  $3c$  26.  $8p - 3q$  27.  $-2j - k$   
 28.  $2a - 5b$  29.  $r - s$  30.  $4y$  31.  $2x + 5y + 11$

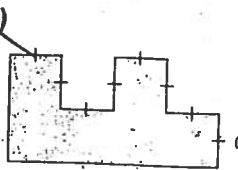
## Problems and Applications

43. Simplify, then evaluate.

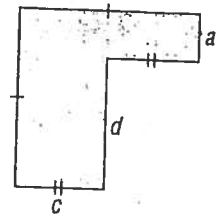
- a)  $2a + 8a$ , when  $a = 2$
- b)  $7t - 3t$ , when  $t = 3$
- c)  $-6k - 8k$ , when  $k = -2$
- d)  $-6y - 9y - y$ , when  $y = -3$
- e)  $3 + 4x - 2x$ , when  $x = 5$
- f)  $-5p - 3p + 1 - 6$ , when  $p = -1$

45. Write and simplify an expression for each perimeter.

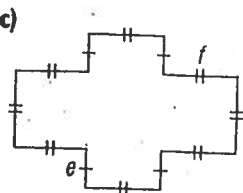
a)



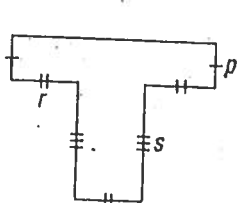
b)



c)



d)



32.  $4a - 5b - 5$  33.  $-15t + 17r + 2$  34.  $9x - 9z - 19$   
 35.  $5p - 11q + 8r - 11$  36.  $4c - 8x - 13w$   
 37.  $2c - 23d + 15j$  38.  $11n + 11p - 2q$   
 39.  $2p + 4q + r + 1$  40.  $-13x - y + 2z$   
 41.  $13q - 15r + 4s$  42.  $7a - 3c - d - 21$  **Problems and Applications** 43. a) 20 b) 12 c) 28 d) 48 e) 13 f) 3  
 44. a)  $m + m + n$ ,  $2m + n$  b)  $z + z + z + z$ ,  $4z$   
 c)  $a + a + 2a + 2a$ ,  $6a$  d)  $f + f + f + q + q + q$ ,  $3f + 3q$   
 e)  $x + x + y + y + y + y$ ,  $2x + 4y$  f)  $a + b + b + c + c$ ,  $a + 2b + 2c$  45. a) 14 c)  $2a + 2d + 4c$  c)  $4e + 8f$   
 d)  $2p + 6r + 2s$  46. The sum is meaningless. You are not adding like terms. 47.  $2p + 2q$