

Worksheet 1 – Simplifying Algebraic Expressions

1. Simplify the following algebraic expressions:

a) $4x + 5x - 7x$

b) $3a - 5a + 19a$

c) $3p - 6p + p$

d) $9q + 7q - 11q$

e) $11w - 16w + 8w - w$

f) $3v - 15v + 7v + 2v$

g) $3xy + 5xy - 7xy$

h) $ab + 13ab - 8ab$

i) $2gh + 6gh - 19gh$

2. Simplify the following algebraic expressions:

a) $4m + 5c - 3m - 2c$

b) $6y - 8t - 7y + 3t$

c) $7j - f - 8j - 9f$

d) $9k + 4x - 4x + 3k$

e) $7m + 4n - m + n$

f) $-6d - 4a - 5d + 9a$

g) $9 - 5t + 3 + 6 - 8t$

h) $3 + 3g - 5g + 2 + g$

i) $2s + 4d - 3 + 3d - 2s + 7$

3. Multiply out the brackets and simplify:

a) $3(-3n - 2) + 5$

b) $-(5f + 2) + 5f$

c) $2(4v - 5) - 3v$

d) $6n + 3(4n - 1)$

e) $3 + 8(5 + 8h)$

f) $8 - 3(6r + 5)$

g) $\frac{1}{2}(8g + 16) - 4$

h) $\frac{1}{3}(9k - 15) - k$

i) $\frac{1}{5}(20 + 50y) - 1$

4. Multiply out the brackets and simplify:

a) $3(2b + 3) + 4(4b - 2)$

b) $9(3c + 9) + 2(c - 1)$

c) $8(t + 3) + (7 + 6t)$

d) $6(2s + 6) + 3(3 - s)$

e) $4(3g - 4) - 2(3g + 4)$

f) $7(u - 1) - (2u - 9)$

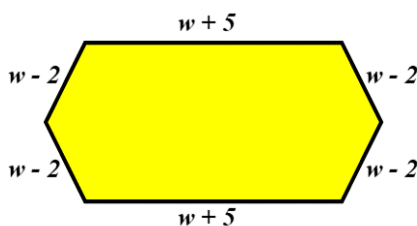
g) $3(2b + 3) - 4(5b - 8)$

h) $8(3c + 9) - 5(c - 1)$

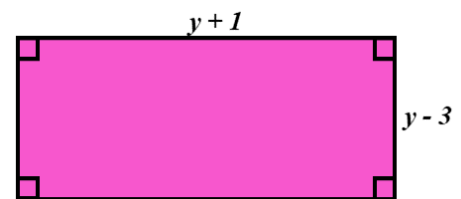
i) $8(i + 3) - (3 + 6i)$

5. Write down an expression for the perimeter of the following shapes. Give your answer in its simplest form.

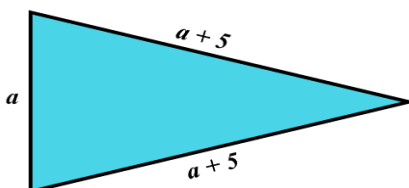
a)



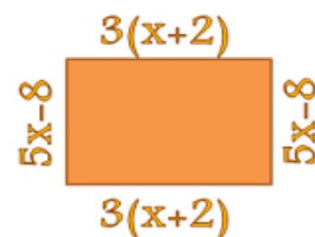
b)



c)



d)



Worksheet 2 – Solving linear equations

1. Solve these equations:

a) $4x + 5 = 13$

b) $6v + 3 = 15$

c) $4k + 1 = 17$

d) $3x - 4 = 5$

e) $7p - 3 = 18$

f) $2m - 2 = 11$

g) $4 - 3h = 16$

h) $11 - 4d = 19$

i) $-3 - 8g = 13$

2. Solve these equations:

a) $2(6x + 12) = 0$

b) $3(7 + 2d) = 21$

c) $4(10 + 2s) = 44$

d) $5(y - 2) = 28$

e) $6(2z - 1) = -18$

f) $7(2 - 3u) = -7$

g) $-3(3 - 2x) = 0$

h) $-2(3e + 4) = 10$

i) $-5(4 - 2j) = -10$

3. Solve these equations:

a) $2(k + 1) + 7 = 10$

b) $3(2x + 5) + x = -6$

c) $6(8 - p) - 2 = 10$

d) $18 = 5(k + 2) + 3$

e) $59 = 9(y + 1) + y$

f) $2x = 14 + (x - 3)$

g) $2(k + 1) = 10(k - 1)$

h) $2(k + 1) = 4(k + 2)$

i) $6(8 - p) = 3(2p - 4)$

4. Solve these equations:

a) $12 - 2(3 + x) = x - 1$

b) $5t + 2(6 + t) = 3t + 8$

c) $10z - 3(2z - 1) = 3(2z - 2)$

d) $2(3 - 2n) + 5(n + 1) = 8$

e) $25 - 5(3x + 4) = 40$

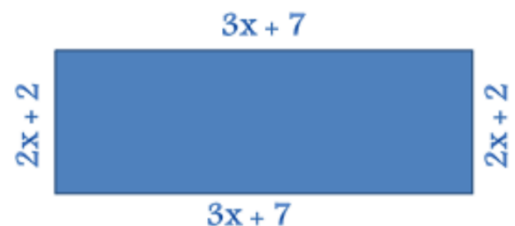
f) $2(h + 1) - 3(h - 5) = 5(7 + h)$

5. The length and breadth of the rectangle are

$(3x + 7)$ cm and $(2x + 2)$ cm respectively.

The perimeter of this rectangle is 43 cm.

a) Form an equation and solve it to find the value of x .



b) Use the answer found in question (a) to find the length and breadth of the rectangle.

6. Solve:

$$\frac{3n + 12}{3} + 5n - 3 = 19$$