



Expanding One Bracket Homework

1. Expand and simplify:

a) $4(x + 5)$

e) $7(x - 5)$

b) $3(a + 2)$

f) $3(4 - p)$

c) $2(y + 11)$

g) $9(q - 9)$

d) $5(b + 3)$

h) $5(x + y - z)$

2. Expand and simplify:

a) $a(a + 2)$

e) $3x(2x - 7)$

b) $x(x - 1)$

f) $4p(p - 3q)$

c) $y(y - 5)$

g) $5a^2(a + 8)$

d) $2b(b + 6)$

h) $3xy(3x + 7 - 2y)$

3. Find an expression for the area of each of the following shapes. All measurements are given in cm.

Write your answers in both non-expanded and expanded form:

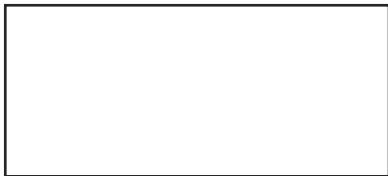
a)



$4x + 3$

x

b)



$5x - 9$

$3x$

Challenge

The rectangle in question 3a) has a perimeter of 56cm. Calculate the area of the rectangle.

$$4x + 3 + x + 4x + 3 + x = 10x + 6$$

$$10x + 6 = 56$$

$$10x = 50$$

$$x = 5\text{cm}$$



WWW	Expanding One Bracket			
1	Expanding one bracket.			
2	Expanding brackets with more than one variable.			
3	Forming an expression for the area of a rectangle.			
Challenge	Forming and solving equations.			
EBI				



Expanding One Bracket **Answers**

1. Expand and simplify:

a) $4(x + 5) = 4x + 20$

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

c) $2(y + 11) = 2y + 22$

d) $5(b + 3) = 5b + 15$

e) $7(x - 5) = 7x - 35$

f) $3(4 - p) = 12 - 3p$

g) $9(q - 9) = 9q - 81$

h) $5(x + y - z) = 5x + 5y - 5z$

2. Expand and simplify:

a) $a(a + 2) = a^2 + 2a$

b) $x(x - 1) = x^2 - x$

c) $y(y - 5) = y^2 - 5y$

d) $2b(b + 6) = 2b^2 + 12b$

e) $3x(2x - 7) = 6x^2 - 21x$

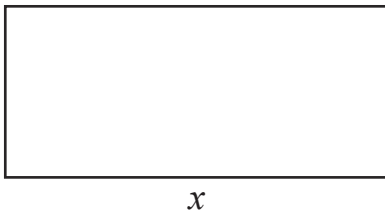
f) $4p(p - 3q) = 4p^2 - 12pq$

g) $5a^2(a + 8) = 5a^3 + 40a^2$

h) $3xy(3x + 7 - 2y) = 9x^2y + 21xy - 6xy^2$

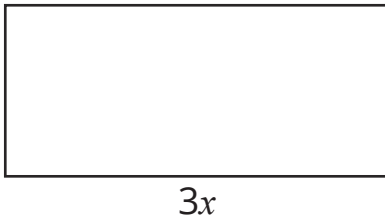
3. Find an expression for the area of each of the following shapes. All measurements are given in cm.
Write your answers in both non-expanded and expanded form:

a)



$$\begin{aligned} & x(4x + 3)\text{cm}^2 \\ & = (4x^2 + 3x)\text{cm}^2 \end{aligned}$$

b)



$$\begin{aligned} & 3x(5x - 9)\text{cm}^2 \\ & = (15x^2 - 27x)\text{cm}^2 \end{aligned}$$

Challenge

The rectangle in question 3a) has a perimeter of 56cm. Calculate the area of the rectangle.

$$4x + 3 + x + 4x + 3 + x = 10x + 6$$

$$10x + 6 = 56$$

$$10x = 50$$

$$x = 5\text{cm}$$

Therefore, the area of the rectangle is given by:

$$5 \times (4 \times 5 + 3) = 5 \times 23$$

$$\text{Area} = 115\text{cm}^2.$$