

UNIT 8 *Algebra: Brackets*

Extra Exercises 8.1

1. Calculate:

- (a) $-5 + 4$ (b) $(-6) \times 3$ (c) $(-5) \times (-9)$
 (d) $-6 + 7$ (e) $-4 - 3$ (f) $-14 + (-3)$
 (g) $-4 - (-2)$ (h) $-6 - (-10)$ (i) $55 \div (-5)$

2. Copy and complete the following tables and write down each of the expansions:

(a)

\times	x	2
3		

$$3(x + 2) =$$

(b)

\times	x	-6
5		

$$5(x - 6) =$$

(c)

\times	x	2
x		

$$x(x + 2) =$$

(d)

\times	$2x$	-3
5		

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

3. Expand:

- (a) $2(3x - 1)$ (b) $5(7x + 2)$
 (c) $6(x - 7)$ (d) $4(x + 3)$
 (e) $x(x - 4)$ (f) $x(3 - 2x)$
 (g) $5(2x - 1)$ (h) $2x(7 - 6x)$

UNIT 8 *Algebra: Brackets***Extra Exercises 8.2**

1. Solve the following equations:

(a) $4(x - 2) = 20$

(b) $5(3 + x) = 50$

(c) $8(x + 2) = 28$

(d) $10(x - 1) = 35$

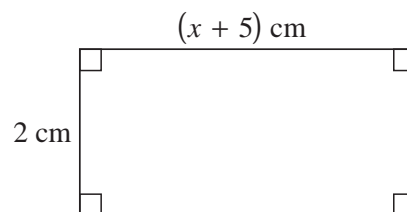
(e) $3(x - 1) = 24$

(f) $4(x - 3) = -8$

(g) $6(x - 4) = -6$

(h) $7(2x - 5) = 42$

2. Given that the area of the following rectangle is 40 cm^2 , determine x :



3. The following flow chart can be used to form an equation:



(a) Write down the equation.

(b) Solve the equation.

4. Solve the following equations:

(a) $8(3 - x) = 12$

(b) $4(5 - x) = 15$

(c) $7(5 - x) = 56$

(d) $6(4 - x) = 4$

UNIT 8 *Algebra: Brackets***Extra Exercises 8.3**

1. Factorise:

(a) $4x + 8$

(b) $5x - 15$

(c) $20 - 4x$

(d) $5x + 30$

(e) $7x - 14$

(f) $9x + 36$

(g) $16x - 24$

(h) $14x + 21$

(i) $15x - 9$

2. Factorise:

(a) $2x^2 + 3x$

(b) $x^2 - x$

(c) $4x^2 - 8x$

(d) $15x + 21x^2$

(e) $27x^2 + 15x$

(f) $42x^2 - 21x$

3. Factorise:

(a) $xy + 2y$

(b) $x^2 + xy$

(c) $3xy + 4xz$

(d) $a^2b + ab^2$

(e) $3a^2 + 4ab$

(f) $5a^2b - 3ab^2$

UNIT 8 *Algebra: Brackets*

Extra Exercises 8.4

1. Complete the following tables and write down each of the expansions:

(a)

×	x	9
x		
4		

$$(x + 4)(x + 9) =$$

(b)

×	x	-4
x		
7		

$$(x - 4)(x + 7) =$$

(c)

×	$2x$	1
$3x$		
-4		

$$(2x + 1)(3x - 4) =$$

(d)

×	$4x$	-3
$2x$		
-7		

$$(4x - 3)(2x - 7) =$$

2. Expand:

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

(b) $(x - 5)(x + 5)$

(c) $(x - 6)(x - 9)$

(d) $(x - 3)(x + 9)$

(e) $(2x + 1)(x + 7)$

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

(g) $(2x + 1)(3x - 5)$

(h) $(4x + 1)(2x - 3)$

Extra Exercises 8.1 Answers

1. (a) -1 (b) -18 (c) 45
 (d) 1 (e) -7 (f) -17
 (g) -2 (h) 4 (i) -11

2. (a)

\times	x	2
3	$3x$	6

$$3(x + 2) = 3x + 6$$

(b)

\times	x	-6
5	$5x$	-30

$$5(x - 6) = 5x - 30$$

(c)

\times	x	2
x	x^2	$2x$

$$x(x + 2) = x^2 + 2x$$

(d)

\times	$2x$	-3
5	$10x$	-15

$$5(2x - 3) = 10x - 15$$

3. (a) $6x - 2$ (b) $35x + 10$ (c) $6x - 42$ (d) $4x + 12$
 (e) $x^2 - 4x$ (f) $3x - 2x^2$ (g) $10x - 5$ (h) $14x - 12x^2$

Extra Exercises 8.2 Answers

1. (a) 7 (b) 7 (c) $1\frac{1}{2}$ (d) $4\frac{1}{2}$

- (e) 9 (f) 1 (g) 3 (h) $5\frac{1}{2}$

2. $2(x + 5) = 40 \Rightarrow x = 15$

3. (a) $6(x - 7) = 24$

(b) $x = 11$

4. (a) $1\frac{1}{2}$ (b) $1\frac{1}{4}$ (c) -3 (d) $3\frac{1}{3}$

Extra Exercises 8.3 Answers

1. (a) $4(x + 2)$ (b) $5(x - 3)$ (c) $4(5 - x)$
 (d) $5(x + 6)$ (e) $7(x - 2)$ (f) $9(x + 4)$
 (g) $8(2x - 3)$ (h) $7(2x + 3)$ (i) $3(5x - 3)$
2. (a) $x(2x + 3)$ (b) $x(x - 1)$ (c) $4x(x - 2)$
 (d) $3x(5 + 7x)$ (e) $3x(9x + 5)$ (f) $21x(2x - 1)$
3. (a) $y(x + 2)$ (b) $x(x + y)$ (c) $x(3y + 4z)$
 (d) $ab(a + b)$ (e) $a(3a + 4b)$ (f) $ab(5a - 3b)$

Extra Exercises 8.4 Answers

1. (a)

\times	x	9
x	x^2	$9x$
4	$4x$	36

 $x^2 + 13x + 36$
- (b)

\times	x	-4
x	x^2	$-4x$
7	$7x$	-28

 $x^2 + 3x - 28$
- (c)

\times	$2x$	1
$3x$	$6x^2$	$3x$
-4	$-8x$	-4

 $6x^2 - 5x - 4$
- (d)

\times	$4x$	-3
$2x$	$8x^2$	$-6x$
-7	$-28x$	21

 $8x^2 - 34x + 21$
2. (a) $x^2 + 3x - 4$ (b) $x^2 - 25$
 (c) $x^2 - 15x + 54$ (d) $x^2 + 6x - 27$
 (e) $2x^2 + 15x + 7$ (f) $2x^2 - 5x - 12$
 (g) $6x^2 - 7x - 5$ (h) $8x^2 - 10x - 3$