Expressions Foundation

I can……

1	Simplify			★ *Simplify expressions involving 1 variable*
	a) a + a + a + a	b) 2b + b + 3b	c) c + 3c + 5c + c	
	d) 4d - d	e) 5e + 2e – 4e	f) 3f – f + 4f – 2f	
2	Simplify			★ *Simplify expressions involving 2 variables*
	a) 2a + a + 2b + 2b	b) 3a + 2b + a + 3b	c) a + 3b + 2a + 2b	
	d) 5a + 2b – a + b	e) 3a + 2b – 2a – 2b	f) 4a – b + 2a + 3b	
3	Expand			★★ *Expand a single bracket (1)*
	a) 4(2a + b)	b) 3(2x – 3y)	c) 2(5x – y)	
	d) 3(10 – x)	e) 5(2x + 7)	f) ½(4x + 8y)	
4	Expand and simplify			★★ *Expand and simplify (1)*
	a) 2(2x + 3y) + 4x	b) 3(x + 4y) + 2(3x - y)	c) 5(2x - y) + 2(x + y)	
	d) 3(2x + 3y) – 2(x + y)	e) 4(x + 3y) – 2(2x + y)	f) 2(4x + y) – 3(2x – y)	
5	Simplify			★★ *Simplify expressions with indices*
	a) a × a	b) 2 × a × a × a	c) 4 × a × 3 × a	
	d) a × a × a × b × b	e) 4 × b × a × 5 × a	f) 2 × b × a × ½ × a × b	
6	Expand			★★ *Expand a single bracket (2)*
	a) x(x + 4)	b) 2x(5 + x)	c) 4x(x + 3)	
	d) x(4y + 5x)	e) x(x - y)	f) 3x(3y – 2x)	
7	Factorise			★★ *Factorise (1)*
	a) 15x + 25	b) 12x + 6	c) 7x + 28	
	d) 36x + 27	e) 20 + 60x	f) 56 + 16x	
8	Factorise			★★ *Factorise (2)*
	a) $x^2 + 6x$	b) $5x + x^2$	c) $4x^2 – 5x$	
	d) $6x^2 + 9x$	e) $10x^2 – 15x$	f) $3x + 21x^2$	
9	Expand and simplify			★★★ *Expand 2 brackets*
	a) (x + 3)(x + 2)	b) (x + 4)(x – 2)	c) (x + 7)(x – 7)	
	d) (x – 2)(x – 5)	e) (x + 6)(x – 6)	f) (x + 10)(x – 3)	
10	Factorise			★★★ *Factorise $x^2 + bx + c$*
	a) $x^2 + 5x + 6$	b) $x^2 + 7x + 12$	c) $x^2 + x - 6$	
	d) $x^2 - 2x - 8$	e) $x^2 - 25$	f) $x^2 - 100$	

Expressions

Foundation

I can……

ANSWERS

1 Simplify

a) a + a + a + a 4a ✓ b) 2b + b + 3b 6b ✓ c) c + 3c + 5c + c 10c ✓

d) 4d – d 3d ✓ e) 5e + 2e – 4e 3e ✓ f) 3f – f + 4f – 2f 4f ✓

★ *Simplify expressions involving 1 variable*

2 Simplify

a) 2a + a + 2b + 2b
3a + 4b ✓

b) 3a + 2b + a + 3b
4a + 5b ✓

c) a + 3b + 2a + 2b
3a + 5b ✓

d) 5a + 2b – a + b
4a + 3b ✓

e) 3a + 2b – 2a – 2b
a ✓

f) 4a – b + 2a + 3b
6a + 2b ✓

★ *Simplify expressions involving 2 variables*

3 Expand

a) 4(2a + b)
8a + 4b ✓

b) 3(2x – 3y)
6x – 9y ✓

c) 2(5x – y)
10x – 2y ✓

d) 3(10 – x)
30 – 3x ✓

e) 5(2x + 7)
10x + 35 ✓

f) ½(4x + 8y)
2x + 4y ✓

★★ *Expand a single bracket (1)*

4 Expand and simplify

a) 2(2x + 3y) + 4x
8x + 6y ✓

b) 3(x + 4y) + 2(3x - y)
9x + 10y ✓

c) 5(2x - y) + 2(x + y)
12x – 3y ✓

d) 3(2x + 3y) – 2(x + y)
4x + 7y ✓

e) 4(x + 3y) – 2(2x + y)
10y ✓

f) 2(4x + y) – 3(2x – y)
2x + 5y ✓

★★ *Expand and simplify (1)*

5 Simplify

a) a × a
a^2 ✓

b) 2 × a × a × a
$2a^3$ ✓

c) 4 × a × 3 × a
$12a^2$ ✓

d) a × a × a × b × b
a^3b^2 ✓

e) 4 × b × a × 5 × a
$20a^2b$ ✓

f) 2 × b × a × ½ × a × b
a^2b^2 ✓

★★ *Simplify expressions with indices*

6 Expand

a) x(x + 4)
$x^2 + 4x$ ✓

b) 2x(5 + x)
$10x + 2x^2$ ✓

c) 4x(x + 3)
$4x^2 + 12x$ ✓

d) x(4y + 5x)
$4xy + 5x^2$ ✓

e) x(x - y)
$x^2 – xy$ ✓

f) 3x(3y – 2x)
$9xy - 6x^2$ ✓

★★ *Expand a single bracket (2)*

7 Factorise

a) 15x + 25
5(3x + 5) ✓

b) 12x + 6
6(2x + 1) ✓

c) 7x + 28
7(x + 4) ✓

d) 36x + 27
9(4x + 3) ✓

e) 20 + 60x
20(1 + 3x) ✓

f) 56 + 16x
8(7 + 2x) ✓

★★ *Factorise (1)*

8 Factorise

a) $x^2 + 6x$
x(x + 6) ✓

b) $5x + x^2$
x(5 + x) ✓

c) $4x^2 – 5x$
x(4x - 5) ✓

d) $6x^2 + 9x$
3x(2x + 3) ✓

e) $10x^2 – 15x$
5x(2x – 3) ✓

f) $3x + 21x^2$
3x(1 + 7x) ✓

★★ *Factorise (2)*

9	Expand and simplify a) (x + 3)(x + 2) $x^2 + 5x + 6$ ✓ b) (x + 4)(x – 2) $x^2 + 2x - 8$ ✓ c) (x + 7)(x – 7) $x^2 – 49$ ✓ d) (x – 2)(x – 5) $x^2 - 7x + 10$ ✓ e) (x + 6)(x – 6) $x^2 – 36$ ✓ f) (x + 10)(x – 3) $x^2 + 7x – 30$ ✓	★★★ *Expand 2 brackets*
10	Factorise a) $x^2 + 5x + 6$ $(x + 3)(x + 2)$ ✓ b) $x^2 + 7x + 12$ $(x + 3)(x + 4)$ ✓ c) $x^2 + x – 6$ $(x + 3)(x - 2)$ ✓ d) $x^2 - 2x – 8$ $(x - 4)(x + 2)$ ✓ e) $x^2 – 25$ $(x + 5)(x - 5)$ ✓ f) $x^2 – 100$ $(x + 10)(x - 10)$ ✓	★★★ *Factorise $x^2 + bx + c$*

60 marks