

BIDMAS

1. $3 + 4 \times 2$

$$3 + (4 \times 2)$$

$$3 + 8$$

$$\underline{\underline{11}}$$

2. $12 \div 3 + 2 \times 5$

$$4 + 2 \times 5$$

$$4 + 10$$

$$\underline{\underline{14}}$$

3. $5 + 3^2 \times 2$

$$5 + 9 \times 2$$

$$5 + 18$$

$$\underline{\underline{23}}$$

$$4. 20 - 3 \times (4 + 2)^2 \div 6$$

$$20 - 3 \times 6^2 \div 6$$

$$20 - 3 \times 36 \div 6$$

$$20 - 108 \div 6$$

$$20 - 18$$

$$\underline{\underline{2}}$$

$$5. ((6 + (2^3 \times 3)) - 4)^2 \div 8$$

$$((6 + (8 \times 3)) - 4)^2 \div 8$$

$$((6 + 24) - 4)^2 \div 8$$

$$(30 - 4)^2 \div 8$$

$$26^2 \div 8$$

$$676 \div 8$$

$$\underline{\underline{84.5}}$$

Algebra

1. Evaluate $2a + 3b$ when $a = 5$, $b = 4$

$$(2 \times 5) + (3 \times 4)$$

$$10 + 12$$

$$\underline{\underline{22}}$$

2. $4p + 3q - 2$ when $p = 2$, $q = 6$

$$(4 \times 2) + (3 \times 6) - 2$$

$$8 + 18 - 2$$

$$\underline{\underline{24}}$$

3. $(2x + 3y)^2$ when $x = 2$, $y = 1$

$$((2 \times 2) + (3 \times 1))^2$$

$$(4 + 3)^2$$

$$7^2$$

$$\underline{\underline{49}}$$

4. $(x^2 + 2y)(3x - y)$ when $x = 3, y = 2$

$$(3^2 + (2 \times 2))((3 \times 3) - 2)$$

$$(3^2 + 4)(9 - 2)$$

$$(9 + 4)(9 - 2)$$

$$13 \times 7$$

$$\underline{\underline{91}}$$

5. $6m + 4n - 3m + 2n$

$$(6m - 3m) + (4n + 2n)$$

$$\underline{\underline{3m + 6n}}$$

6. $2x(3 + x)$

$$(2x \times 3) + (2x \times x)$$

$$6x + 2x^2$$

$$2x^2 + 6x$$

Expanding Brackets

1. $(x+3)(x+5)$

$$(x \times x) + (x \times 5) + (3 \times x) + (3 \times 5)$$

$$x^2 + 5x + 3x + 15$$

$$x^2 + 8x + 15$$

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

$$(2x \times x) + (2x \times -4) + (3 \times x) + (3 \times -4)$$

$$2x^2 - 8x + 3x - 12$$

$$2x^2 - 5x - 12$$

3. $(x+2)(x^2 + 3x + 4)$

$$x(x^2 + 3x + 4) + 2(x^2 + 3x + 4)$$

$$x^3 + 3x^2 + 4x + 2x^2 + 6x + 8$$

$$x^3 + 3x^2 + 2x^2 + 4x + 6x + 8$$

$$x^3 + 5x^2 + 10x + 8$$

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

$$\text{Expand } (x+1)(x-2)$$

$$(x \times x) + (x \times -2) + (1 \times x) + (1 \times -2)$$

$$x^2 - 2x + x - 2$$

$$x^2 - x - 2$$

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

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

$$x^3 - x^2 - 2x + 3x^2 - 3x - 6$$

$$x^3 - x^2 + 3x^2 - 2x - 3x - 6$$

$$x^3 + 2x^2 - 5x - 6$$

$$5. (2x - 3)(x + 4)(x - 1)$$

$$\text{Expand } (2x - 3)(x + 4)$$

$$(2x \times x) + (2x \times 4) + (-3 \times x) + (-3 \times 4)$$

$$2x^2 + 8x - 3x - 12$$

$$2x^2 + 5x - 12$$

$$(x - 1)(2x^2 + 5x - 12)$$

$$x(2x^2 + 5x - 12) - 1(2x^2 + 5x - 12)$$

$$2x^3 + 5x^2 - 12x - 2x^2 - 5x + 12$$

$$2x^3 + 5x^2 - 2x^2 - 12x - 5x + 12$$

$$2x^3 + 3x^2 - 17x + 12$$