

DIRECTED NUMBERS

Form 1 Summer Course

Vol 1 - CH1

Part 6 - Power

$$\begin{aligned} 1. \quad & 3 - 2^4 \\ & = 3 - 16 \\ & = -13 \end{aligned}$$

$$\begin{aligned} 2. \quad & (-4)^2 - [(-2) \times (-5) - (-7)] \\ & = 16 - [10 - (-7)] \\ & = 16 - (10 + 7) \\ & = 16 - 17 \\ & = -1 \end{aligned}$$

$$\begin{aligned} 3. \quad & [(-2)^2 - (-3)] \times (-1 + 3)^2 \\ & = (4 + 3) \times (2)^2 \\ & = 7 \times 4 \\ & = 28 \end{aligned}$$

$$\begin{aligned} 4. \quad & (-3)^2 \times \{(-3^2) - [(-2^2) - (-2)^2]\} \\ & = 9 \times \{(-9) - (-4 - 4)\} \\ & = 9 \times [(-9) - (-8)] \\ & = 9 \times (-9 + 8) \\ & = 9 \times (-1) \\ & = -9 \end{aligned}$$

INTRODUCTION TO ALGEBRA

Form 1 Summer Course

Vol 1 - CH2

Part 1 - Algebra Expressions

(g) $x^2 + \frac{xy}{2}$

(h) $\frac{2a(b+1)}{r^2}$

(i) $\frac{v^2 - u^2}{2a}$

(j) $6x - 4y = 89$

(k) $x^2 + y + 46 = 0$ (or equivalent)

Part 2 - Additional and Subtraction

1. (b) $2m - 2n - 7$

(c) $7x + 3y$

(d) $-h + 8k$

(e) $-3x + 2y$

(f) $-3e + 12f - 4$

(g) $13a - 2b$

(h) $-4x^2 - 5x$

(i) $-a^2 + 2a + 15$

(j) $-3x^2 + 8x + 1$

(k) $a^3 + 4a^2 + a - 24$

$$\begin{aligned}
 2. \quad (b) \quad & (x^2 + 2x) - (8 - 5x) \\
 & = x^2 + 2x - 8 + 5x \\
 & = x^2 + 7x - 8 \\
 (c) \quad & (5a - 2b + 3c) - (8c + 2a - 6a) \\
 & = 5a - 2b + 3c - 8c - 2a + 6a \\
 & = 9a - 2b - 5c \\
 (d) \quad & (5x^2 - x + 11) + (3x^2 - 11x - 7) \\
 & = 5x^2 - x + 11 + 3x^2 - 11x - 7 \\
 & = 8x^2 - 12x + 4 \\
 (e) \quad & (6 - 8x^2 + 9x) - (4x + 4) \\
 & = 6 - 8x^2 + 9x - 4x - 4 \\
 & = -8x^2 + 5x + 2 \\
 (f) \quad & (x + 2) - (2x - 3) - (-7x + 1) \\
 & = x + 2 - 2x + 3 + 7x - 1 \\
 & = 6x + 4 \\
 (g) \quad & -(2a^2 - a + 1) - (a^2 + 5a) \\
 & = -2a^2 + a - 1 - a^2 - 5a \\
 & = -3a^2 - 4a - 1 \\
 (h) \quad & (2x + 3y) - (5x - 2y) + (x - 5y) \\
 & = 2x + 3y - 5x + 2y + x - 5y \\
 & = -2x \\
 (i) \quad & (4z - 6y^2) - (2z - 5x) - (x + 5y^2 - 3z) \\
 & = 4z - 6y^2 - 2z + 5x - x - 5y^2 + 3z \\
 & = 4x - 11y^2 + 5z \\
 (j) \quad & (5x + 6y^2 - 4z^2) - (x - 2xy + 3y^2) - (3xy - 7z^2) \\
 & = 5x + 6y^2 - 4z^2 - x + 2xy - 3y^2 - 3xy + 7z^2 \\
 & = 4x - xy + 3y^2 + 3z^2
 \end{aligned}$$