

## 5.2 ALGEBRAIC EXPRESSIONS INVOLVING BASIC ARITHMETIC OPERATIONS

### Part 1 : Algebraic Expressions Involving Addition And Subtraction

Simplify each of the following :

$$(a) 4x - 3y - x + 2y = 4x - x - 3y + 2y$$

$$= 3x - y$$

$$(b) 8x - 5 - 3x + 8 = 8x - - 5 +$$

$$= 5x +$$

$$(c) 10 - 4m + 3 - m = 10 + - - m$$

$$= 13 -$$

$$(d) 8m - 9k + 7k - 5m = 8m$$

$$= 3m$$

$$(e) p + 2p - 5 + 3p =$$

$$= p -$$

$$(f) 7h - 5k - 3h + h = 7h - 3h - +$$

$$= -4k$$

**Part 2 : Algebraic Expressions Involving Multiplication**

(a)  $4a \times 3a = 4 \times a \times 3 \times a$   
 $= 4 \times 3 \times \times$   
 $= a^2$

(b)  $8m \times 5 = \times m \times$   
 $= 8 \times 5 \times$   
 $= 40m$

(c)  $pq \times 9 = p \times \times 9$   
 $=$

(d)  $9k \times k = 9k$

(e)  $7h \times 5hk = 7 \times 5 \times \times \times$   
 $=$

(f)  $n^2 \times 4n = \times \times 4 \times$   
 $= 3$

**Part 3 : Algebraic Expressions Involving Division**

(a)  $7x \div x = \frac{7 \times}{\cancel{x}} = 7$

(b)  $\frac{2n}{8} = \frac{n}{\cancel{2} \times \cancel{4}}$

(c)  $\frac{10c^2}{4c} = \frac{10 \times \cancel{c} \times \cancel{c}}{4 \times c} = \frac{10}{\cancel{4} \times 2}$

(d)  $k \div 3k^3 = \frac{k}{3 \times \cancel{k} \times \cancel{k} \times \cancel{k}} = \frac{1}{\cancel{3} \times \cancel{k}^2}$

(e)  $6u^3 \div 3u^2 = \frac{6u^3}{3u^2} = \frac{6 \times \cancel{u} \times \cancel{u} \times \cancel{u}}{3 \times \cancel{u}^2} = \frac{6}{\cancel{3}}$