

Ex 10(B)

Form algebraic expression

a) 37 added to $a = a + 37$

b) a added to $b = b + a$

c) $3a$ added to $4b = 4b + 3a$

d) $6a$ added to $10a = 10a + 6a$

e) $4ab$ added to $3ac = 3ac + 4ab$

f) $6a^2b$ added to $4ab^2 = 4ab^2 + 6a^2b$

g) $8x^2y$ added to $4xy^2 = 4xy^2 + 8x^2y$

h) Sum of a, b and $c = a + b + c$

i) Sum of x, y and $z = x + y + z$

a) b subtracted from $10b = 10b - b$

b) $3x$ subtracted from $5x = 5x - 3x$

c) $7ac$ subtracted from $9a = 9a - 7ac$

d) $12ac$ subtracted from $20ab = 20ab - 12ac$

- c) $7ac$ subtracted from $20ab = 20ab - 7ac$
- d) $12ac$ subtracted from $20ab = 20ab - 12ac$
- e) $12a^2b^2c^3$ subtracted from $17a^2b^2c^3$
 $= 17a^2b^2c^3 - 12a^2b^2c^3$
- f) $20a^2b$ subtracted from $40a^2$
 $= 40a^2 - 20a^2b$
- g) $22xy$ subtracted from $30ax$
 $= 30ax - 22xy$
- h) $4xy$ subtracted from $6xy = 6xy - 4xy$

How to take Common

a) $\underline{10b} - \underline{b} = 2 \text{ terms}$
 $\underline{10b}, \underline{b}$
 $b [10 - 1] \rightarrow \text{Square brackets}$
 $= b [9]$
 $= 9b$

b) $5x - \underline{3x}$
 $x [5 - 3]$
 $x [2]$

$= 2x$

- Write the expression
- Take the common if possible

$$x[2]$$

$$= 2x$$

c) $9a - 7ac$
 $a[9 - 7c]$

d) $20ab - 12ac$

$$20 = 2 \times 2 \times 5$$

$$12 = 2 \times 2 \times 3$$

$$4a[5b - 3c]$$

↓

↓

c $17a^2b^2c^3 - 12a^2b^2c^3$

* If one number is odd and

→ Write the expression

→ Take the common if possible

→ Then solve the expression

* If number is even start with 2

* If number is odd start with 3

Factors

2	20
2	10
5	5
	1

2	12
2	6
3	3
	1

$$\underline{c} \quad \underline{17a^2b^2c^3} - \underline{12a^2b^2c^3}$$

* If one number is odd and second number is even we can't take it common

$$a^2b^2c^3 [17 - 12]$$

$$a^2b^2c^3 [5]$$

$$= 5a^2b^2c^3$$

$$\underline{b} \quad 4a^2 - 20a^2b$$

$$4 = 2 \times 2$$

$$20 = 2 \times 2 \times 5$$

$$= 2 \times 2$$

$$= 4$$

$$\begin{array}{r|l} 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 20 \\ \hline 2 & 10 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$$4a^2 [1 - 5b]$$

Q 30ax - 22xy

$$\underline{30} = 3 \times 2 \times 5$$

$$22 = 2 \times 11$$

$$= 2$$

$$2x [15a - 11y]$$

3	30
2	10
5	5
	1

2	22
11	11
	1

Q 6xy - 4xy

$$\checkmark 6 = 2 \times 3$$

$$\checkmark 4 = 2 \times 2$$

$$= 2$$

$$= 2xy [3 - 2]$$

2	6
3	3
	1

2	4
2	2
	1

$$= 2xy \overset{\curvearrowright}{(1)}$$

$$= 2xy$$

H.W

$$\underline{1} \quad 10a + 6a$$

$$\underline{2} \quad 3ac + 4ab$$

$$\underline{3} \quad 4ab^2 + 6a^2b$$

$$\underline{4} \quad 4xy^2 + 8x^2y$$

Q Make the factor of

$$\underline{1} \quad 12$$

$$\underline{3} \quad 18$$

$$\underline{5} \quad 25$$

$$\underline{7} \quad 15$$

$$\underline{2} \quad 14$$

$$\underline{4} \quad 20$$

$$\underline{6} \quad 10$$

$$\underline{8} \quad 30$$

$$\underline{9} \quad 45$$

$$\underline{10} \quad 9$$

Multiply the following

$$\underline{a} \quad 3 \times 8 = 38$$

$$\underline{a} \quad 3 \times 8 = 38$$

$$b) \quad 5 \times a = 5a$$

$$c) \quad a \times b = ab$$

$$d) \quad a \times a = a^2$$

$$e) \quad a \times b \times c = abc$$

$$f) \quad p \times p \times p = p^3$$

$$g) \quad \underline{3b} \times \underline{4a} = 12ba$$

$$h) \quad 4\underline{a} \times 5\underline{a} = 20a^2$$

$$i) \quad \underline{ab} \times \underline{cd} = abcd$$

$$j) \quad \underline{a^3} \times \underline{a^2} = a^5$$

$$k) \quad \underline{3a^2b} \times \underline{5a^2b} = 15a^4b^2$$

$$l) \quad 7ab \times 5ac = 35a^2bc$$

Divide the following ÷

a) $a \div b = \frac{a}{b}$

b) $x \div a = \frac{x}{a}$

c) $axy \div xy = \frac{axy}{xy} = a$

d) $x^4 \div x^2 = \frac{x \times x \times x \times x}{x \times x} = x^2$

~~e)~~ $2a \div 5 = \frac{2a}{5}$

~~f)~~ $45x^2 \div 9x =$

g) $7a^4b^3c^5 \div a^2b^2c^2 =$

h) $6xy \div 3xy =$

i) $a^2b^2c^2 \div abc =$

6 $\frac{45x^2}{9x}$

$45 = \underline{3 \times 3 \times 5}$ ✓

$\underline{9 = 3 \times 3}$

3	45
3	15
5	3
	1

$$= \frac{\cancel{3} \times \cancel{3} \times \cancel{5} \times \cancel{2} \times \cancel{2}}{\cancel{3} \times \cancel{3} \times \cancel{2}}$$

$$\begin{array}{r} 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array}$$

$$= 5x$$

g) $7a^4b^3c^5 \div a^2b^2c^2$

$$= \frac{7a^4b^3c^5}{a^2b^2c^2}$$

$$= \frac{7 \times \cancel{a} \times \cancel{a} \times \cancel{a} \times \cancel{a} \times \cancel{b} \times \cancel{b} \times \cancel{b} \times \cancel{c} \times \cancel{c} \times \cancel{c}}{\cancel{a} \times \cancel{a} \times \cancel{b} \times \cancel{b} \times \cancel{c} \times \cancel{c}}$$

$$= 7a^2b^3c^3$$

h) $6xy \div 3xy$

$$h) \quad 6xy \div 3xy$$

$$= \frac{\cancel{6}^2 \times \cancel{x} \times \cancel{y}}{\cancel{3} \times \cancel{x} \times \cancel{y}}$$

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

$$i) \quad a^2 b^2 c^2 \div abc$$

$$= \frac{\cancel{a} \times \cancel{a} \times \cancel{b} \times \cancel{b} \times \cancel{c} \times \cancel{c}}{\cancel{a} \times \cancel{b} \times \cancel{c}}$$

$$= \underline{\underline{abc}}$$

Q

Frame the algebraic expression

a)

Two times number increased by three

let the number be x

$$2x + 3 =$$

Q Frame the algebraic expression

a) Two times number increased by three
let the number be x

$$2x + 3 =$$

b) Half of number added to 12
let the number be w

$$= \frac{1}{2}w + 12 //$$

c) Twice a number decreased by another number

let the number be x , let the another number be y

$$2x - y$$

d) Four times a number divided by another number

let the number be p

let the another number be l

$$= \frac{4p}{l} \quad \text{or} \quad 4p \div l$$

Express the following expressions
in words.

a) $y + 10$

Ten is added to y

b) $6m - 3$

Six times a number decreased by 3.

c) $8 + \underline{2x}$

Two times a number added to
eight