ALGEBRA

C.W# 18, Topic: Algebra.(ex-14.1,14.2)

Arithmetic: **Working with number is Arithmetic.**

Algebra: **Working with number and symbol.**

- **In Arithmetic we only use numbers but in Algebra we use numbers and symbols.**

Constant: **Numbers have fixed values. For example, 8 is always 8. It does not change numbers. Numbers are therefore called constant.**

Variables: **The values of symbols can vary, they are called variables. The letter used to represent a variable is called a literal number.**

Notes :

* In Algebra the sum of a literal number and a constant say y and 6 , is denoted by y+6 , two literal numbers p and q is denoted by p+q

* Similarly x – 3 denotes that the constant 3 is subtracted from the literal number x, two literal numbers x – y denotes that y is subtracted from the literal number x.

* We omit the multiplication sign between a number and a literal number or between two literal numbers. Ex: 5 × y is written as 5y and x × y = xy

* Basic operation / operational symbol: + , - , x , ÷

- Terms which have same variables are called like terms.(3a,5a,9a)
- Terms which have different variables are called unlike terms.

(3a,5b,9c)

- Like terms can be added and subtracted.
- While adding or subtracting like terms, only coefficients are added

Ex- 14.4(pg# 201)

B) group the like terms. (S.Q)

2)3a, 5x, 96b,6a,9x,5a,6b, 9b

Ans. (3a, 6a, 5a) (96b, 6b, 9b) (5x,9x)

3) 4p,5q,2r,3q,10q,r,3p,4r

Ans.(4p,3p) (5q,3q,10q) (2r,r,4r)

c) Write the sum.(S.Q)

2) xy, 4xy

= xy+4xy

= 5xy (Ans.)

3) 3a, 4b

= 3a+4b

D)Write the difference.

2) 4xy, xy

=4xy-xy

=3xy(Ans.)

3) 3a, 4b

=3a-4b

H.W#11,EX-14.4,C(1,3,5)D(1,3,5)

R.T#2(UNITARY METHOD)

- Q. Solve the following word problems.(5 x 2 =10)
- 1) 12 kg of potatoes cost Tk 108. How much will Mr. Hasan has to pay if he wants only 8 Kg of potatoes?
- 2) The distance covered by a car in 13 hours is 663 km. What is the distance covered by the car in 9 hours?

C.W# 19, Topic: Algebra.(Ex-14.1)

EX-14.1(PG# 198)

Q.Write the following using numbers, literal numbers and sign of basic operations.

2) 5 + 3y

3) $\frac{z}{2}$

5) (7 + x) -5

6) 7÷(p- 2) or $\frac{7}{p-2}$

Coefficient: A number before a variable or a term is called coefficient.

3a represents 3 times a. Here constant 3 is said to be the coefficient of variable a

For example: in 5xy, 5x is the coefficient of y.

C.W# 19, Topic: Algebra.(Ex-14.2)

Ex- 14.2(pg# 199)

Q. Find the coefficient of the variable given in brackets.

1. 8z (z) Ans : 8

3. 4xy (xy) Ans : 4

4. ab (b) Ans : a

7.4xyz (yz) Ans:4x

10. pqr (pr) Ans : q.

C.W# 20, Topic: Algebra.(Ex-14.3)

EX- 14.3(PG#200)

Q.A. Write an algebraic expression:

1.2 subtracted from the sum of x and p **Ans :(x + p) -2**

2. 3 times x added to the product of 2 and y **Ans : 3x + 2y**

5. 4 times b is subtracted from 5 times a **Ans :5a - 4b**

6.The product of a and b ,b and c, c and d are added **Ans : ab + bc + cd**

7.times the product of x and y , less 10 **Ans :5xy - 10**

9.The product of m and 10 , added to 10 **Ans : 10m + 10**

10. 6 times the product of x, y and z, added to half of z **Ans :** $6xyz + \frac{z}{2}$

C.W# 20, Topic: Algebra.(Ex-14.3)(B,C)

B)Write the terms of the algebraic expression.

2) 4a, -5b 4) ax, -by, 2 5) mn, np,nq

C) Find the value of the following: Ex. 14.3 (c)

(1) If a=3, b=2, c=4

a). a+b+c

= 3 + 2 + 4

= 9 Ans

d). ab+bc

= (2 x 3)+ (2x 4)

= 6 + 8

= 14 Ans

e). $\frac{a\,x\,b}{c}$

$= \frac{3\,x\,2}{4}$

$= \frac{6}{4}$

$= \frac{3}{2}$ $= 1\,\frac{1}{2}$ **Ans**

H.W#13,PG#200 A (3,4,8),C(1)(b,c,)

C.W# 21, Topic: Algebra.(Ex-14.3)(C)

2) Given, x =1, y = 0, z=2.

c) $\frac{x-y}{z-x}$

$= \frac{1-0}{2-1}$

$= \frac{1}{1}$

=1(Ans.)

d) 4y

= 4 x 0

= 0

e) $\frac{1}{2}$ **xz**

$= \frac{1}{2}$ **x 1 x 2**

= 1 x 1 x1

= 1 (Ans.)

C.W# 22, Topic: Algebra.(Ex-14.5)

Q. Simplify.

2)4a + 3b + 3a + 4b+ 3a + 2b

= (4a + 3a + 3a) + (3b+4b+2b)

=10a + 9b ans.

6)10pq+ 5q + 6q -5pq

=(10pq-5pq)+(5q+6q)

=5pq+11q ans

4) 4x +3y +z+ 5x +5y +5z

= (4x +5x) +(3y+5y) +(z+5z)

= 9x +8y + 6z ans.

8) 3x + 3y + 3z+6x+6z+6y

=(3x+6x)+(3y+6y)+ (3z+6z)

= 9x+9y + 9z ans

10) 3x + 4y + 5x+6y+7x +9y

=(3x+5x+7x)+(4y+6y+9y)

=15x +19y ans.

12) 2xy +3yx + 4xz +3xy + 2xz + yx+10xz

=(2xy +3yx+3xy+yx)+(4xz+2xz+10xz)

= 9xy + 16xz ans.

H.W#15,(1,3,5,7)

R.T # 3(Topic: Circle & Simplification)

R.W#1, Topic: Algebra.