

Arithematic Progressions Ex 19.6 Q1

## (i) 7 and 13

Let  $\it A$  be the arithematic mean of 7 and 13.

Then,

$$\Rightarrow$$
  $A-7=13-A$ 

$$\Rightarrow A = \frac{13 + 7}{2} = 10$$

... A.M is 10.

## (ii) 12 and -8

Let  $\emph{A}$  be the arithematic mean of 12 and -8

Then,

$$\Rightarrow$$
  $A - 12 = -8 - A$ 

$$\Rightarrow \qquad A = \frac{12 + \left(-8\right)}{2} = 2$$

.. A.M is 2.

(iii) 
$$(x-y)$$
 and  $(x+y)$ 

Let A be the arithematic mean of (x - y) and (x + y)

Then,

$$(x-y)$$
,  $A$ ,  $(x+y)$  are in A.P

$$\Rightarrow$$
  $A - (x - y) = (x + y) - A$ 

$$\Rightarrow A = \frac{(x-y)+(x+y)}{2} = \frac{2x}{2} = x$$

∴ A.M is *x*.

Arithematic Progressions Ex 19.6 Q2

Let 
$$A_1$$
,  $A_2$ ,  $A_3$ ,  $A_4$  be the 4 A.M.s between 4 and 19  
Then,  
 $4$ ,  $A_1$ ,  $A_2$ ,  $A_3$ ,  $A_4$ , 19 are in A.P of 6 terms  
 $A_n = a + (n - 1)d$   
 $a_6 = 19 = 4 + (6 - 1)d$   
or  $d = 3$  ----(i)  
Now,  
 $A_1 = a + d = 4 + 3 = 7$   
 $A_2 = A_1 + d = 7 + 3 = 10$   
 $A_3 = A_2 + d = 10 + 3 = 13$   
 $A_4 = A_3 + d = 13 + 3 = 16$ 

The 4 A.M.s between 4 and 19 are 7, 10, 13, 16.

Arithematic Progressions Ex 19.6 Q3

$$2, a_1, a_2, a_3, a_4, a_5, a_6, a_7, 17$$

$$17 = a + 8d$$

$$a = 2 \Rightarrow d = \frac{15}{8}$$

$$a_1 = 2 + \frac{15}{8} = \frac{31}{8}$$

$$a_2 = \frac{31}{8} + \frac{15}{8} = \frac{46}{8}$$

so we get our final series as

$$2, \frac{31}{8}, \frac{46}{8}, \frac{61}{8}, \frac{76}{8}, \frac{91}{8}, \frac{106}{8}, \frac{121}{8}, \frac{136}{8} = 17$$

\*\*\*\*\*\*\* FND \*\*\*\*\*\*