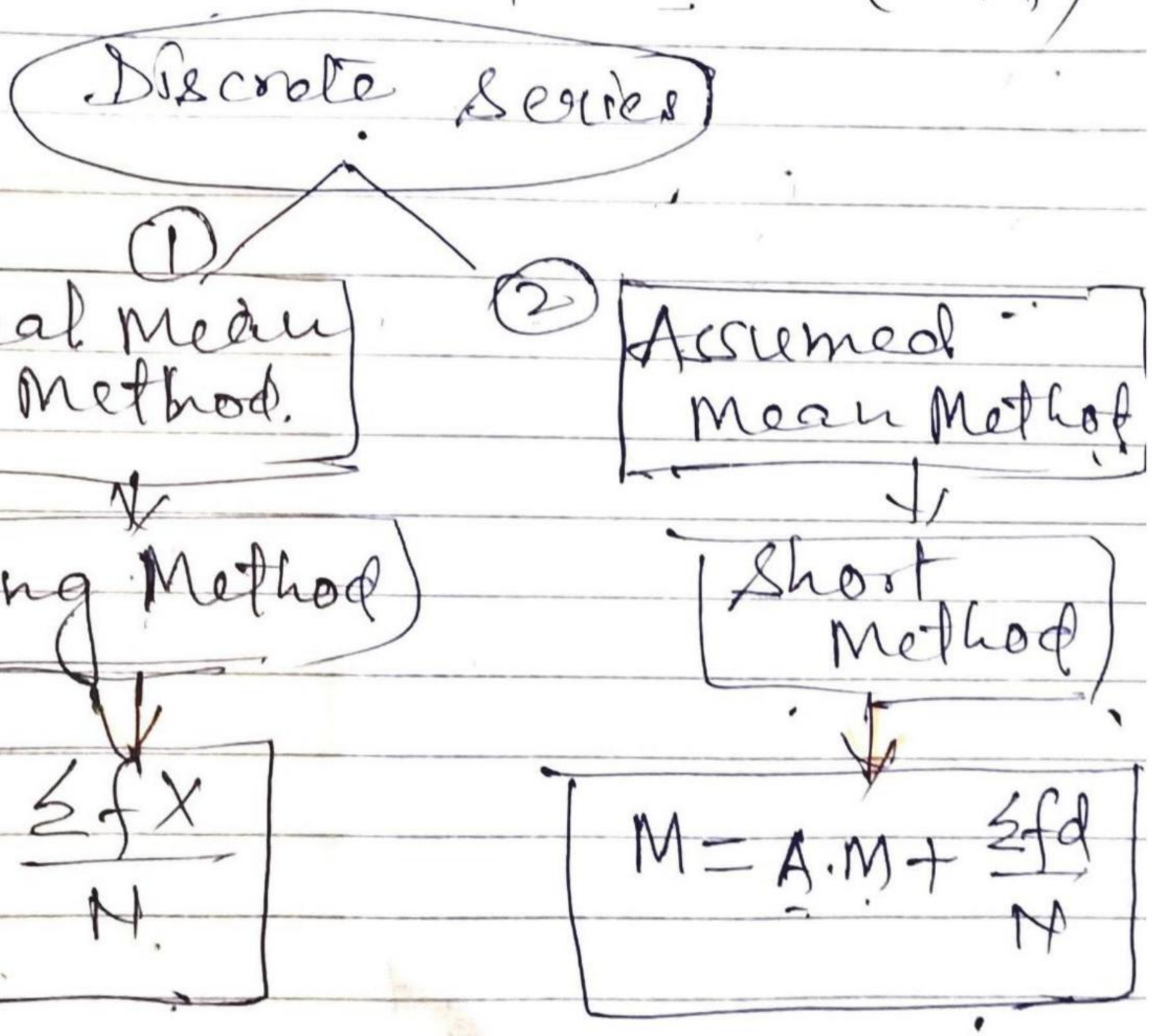
Calculation of Mean in Grouped Data

Discrete series (x, f)

Continuous series (C.I, f)



Long Method (steps) ::

(1) Find N = Total of f.

(2) Find fx = Multiply 'f' and 'x'

(3) Find Σfx = Total of 'fx'

(4) Find $\boxed{\text{Mean} = \frac{\Sigma fx}{N}}$

E.g

x	f	fx
18	4	72
17	6	102
16	7	112
15	8	120
14	10	140
13	9	117
12	4	48
11	2	22

$\boxed{N = 50}$ $\boxed{\Sigma fx = 733}$

$\text{Mean} = \frac{\Sigma fx}{N}$

$= \frac{733}{50}$

$\boxed{M = 14.66}$

Short Method (steps)

(1) Find N = Total of f.
(2) Find A.M from 'x'
(3) Find d = (x - A.M.)
(4) Find fd = multiply 'f' and 'd'
(5) Find Σfd = Total of 'fd'
(6) Find $M = A.M + \frac{\Sigma fd}{N}$

E.g

x	f	$d = x - A.M$ $x = 15$	fd	
18	4	3	12	
17	6	2	12	31
16	7	1	7	
(15)	8	0	0	
14	10	-1	-10	
13	9	-2	-18	-48
12	4	-3	-12	
11	2	-4	-8	
	$N = 50$		$\Sigma fd = -17$	

A.M = 15

$M = A.M + \frac{\Sigma fd}{N}$

$= 15 + \frac{-17}{50}$

$$M = 15 + -\frac{17}{50}$$

$$= 15 - \frac{17}{50}$$

$$= 15 - 0.34$$

$$\boxed{M = 14.66}$$ Ans