

③

class	frequency f_i	class	class Marks x_i	$f_i x_i$
4-7	5	3.5-7.5	5.5	27.5
8-11	4	7.5-11.5	9.5	38.0
12-15	9	11.5-15.5	13.5	121.5
16-19	10	15.5-19.5	17.5	175.0
	28			362

$$\text{Mean } (\bar{x}) = \frac{\sum f_i x_i}{\sum f_i} = \frac{\cancel{362}^{181}}{\cancel{28}^{14}} = 12.93$$

④

no. of pages written per day	no. of days f_i	class Marks x_i	$f_i x_i$
16-18	1	17	17
19-21	3	20	60
22-24	4	23	92
25-27	9	26	234
28-30	13	29	377
total	30		780

$$\text{Mean } (\bar{x}) = \frac{\sum f_i x_i}{\sum f_i} = \frac{\cancel{780}^{26}}{\cancel{30}^3} = 26$$