

1.

$$\begin{aligned} \bar{x} &= \frac{\sum xw}{\sum w} \\ &= \frac{6 \times 4 + 2 \times 2 + 1 \times 1 + 4 \times 10 + 3 \times 3}{4 + 2 + 1 + 10 + 3} \\ &= \frac{78}{20} = 3.9 \end{aligned}$$

2.

$$\begin{aligned} \bar{x} &= \frac{\sum xw}{\sum w} \\ &= \frac{109 \times 12 + 107 \times 5 + 105 \times 2 + 112 \times 1}{12 + 5 + 2 + 1} \\ &= \frac{2165}{20} = 108.25 \end{aligned}$$

3. (i)

$$\bar{x} = \frac{12 + 20 + 2 + 4 + 10}{5} = \frac{48}{5} = 9.60$$

(ii)

$$\begin{aligned} \bar{x} &= \frac{\sum xw}{\sum w} \\ &= \frac{12 \times 1 + 20 \times 2 + 2 \times 2 + 4 \times 1 + 10 \times 2}{1 + 2 + 2 + 1 + 2} \\ &= \frac{80}{8} = 10 \end{aligned}$$

6.

$$\bar{x}_2 = \bar{x}_1$$

$$\frac{x \times 5 + 12 \times 4 + 22 \times 1}{5 + 4 + 1} = \frac{13 \times 5 + 10 \times 4 + 15 \times 1}{5 + 4 + 1}$$

$$5x + 70 = 120$$

$$5x = 120 - 70 = 50$$

$$x = 50 \div 5 = 10$$