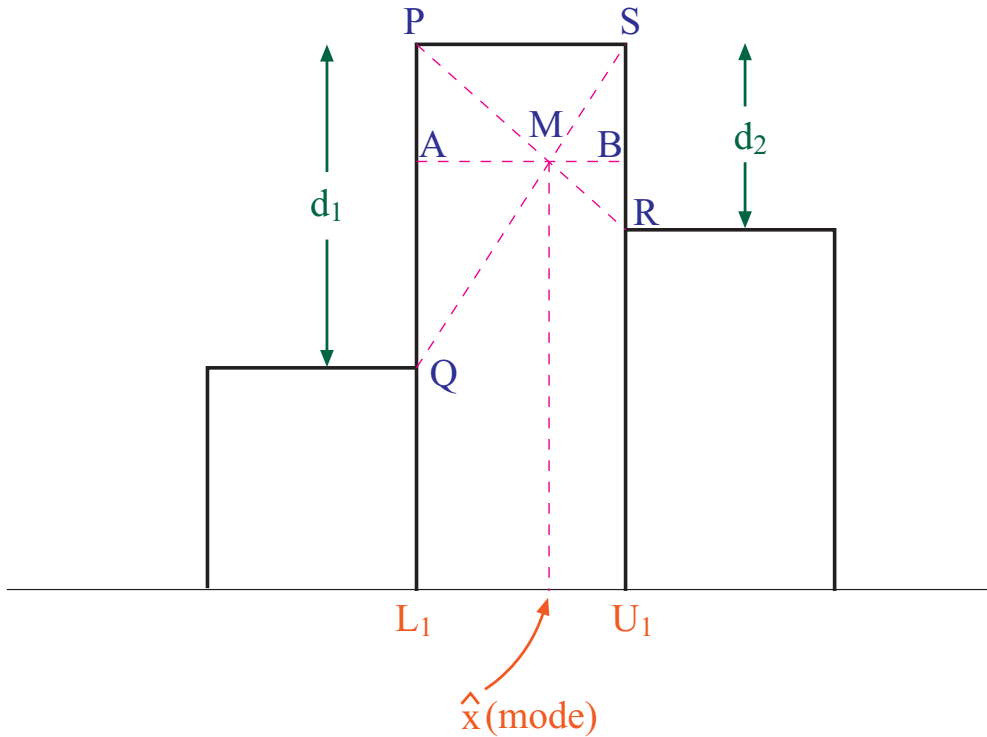


Mode



$$\frac{MA}{PQ} = \frac{MB}{RS}$$

$$\text{So } \frac{\hat{x} - L_1}{d_1} = \frac{U_1 - \hat{x}}{d_2}$$

$$d_2(\hat{x} - L_1) = d_1(U_1 - \hat{x})$$

$$= d_1(L_1 + C - \hat{x}) \quad \text{C: class width}$$

$$\text{i.e. } d_2\hat{x} - d_2L_1 = d_1L_1 + d_1C - d_1\hat{x}$$

$$d_2\hat{x} + d_1\hat{x} = d_1L_1 + d_2L_1 + d_1C$$

$$\hat{x}(d_1 + d_2) = L_1(d_1 + d_2) + d_1C$$

$$\hat{x} = \frac{L_1(d_1 + d_2)}{(d_1 + d_2)} + \frac{d_1C}{(d_1 + d_2)}$$

$$= L_1 + \frac{d_1}{d_1 + d_2} \cdot C$$