# High School Assignment

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## 1 2018-ICSE-10th board-Problem : 8(b)

Given, the mean of the following distribution is, m = 24.
We know that,

$$mean(m) = \frac{\sum f_i x_i}{\sum f_i} \tag{1}$$

As per the question,

Table 1: Given data

| Intervals | Frequency ($f_i$) | Mid-Value ($x_i$) | $f_i x_i$ |
|---|---|---|---|
| 0-10 | 7 | 5 | 35 |
| 10-20 | a | 15 | 15a |
| 20-30 | 8 | 25 | 200 |
| 30-40 | 10 | 35 | 350 |
| 40-50 | 5 | 45 | 225 |
| | $\sum f_i = 30 + a$ | | $\sum f_i x_i = 810 + 15a$ |

Therefore, from equation 1, the value of mean(m = 24) can be written as,

$$24 = \frac{810 + 15a}{30 + a}$$

$$24(30 + a) = 810 + 15a$$

$$720 + 24a = 810 + 15a$$

$$9a = 90$$

$$a = 10$$

Therefore, the required value(a) is 10.