Sect. 3 – 2, #4
Yes, there is a difference

<table>
<thead>
<tr>
<th></th>
<th>BE</th>
<th>BU</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean    | 39  | 26.8 |
Median  | 13  | 19.5 |
Mode    | No  | No   |
Midrange| 51.5| 34   |

Sect. 3 – 2, #30:

\[
\text{Avg} = \frac{0.20 \cdot 83 + 0.30 \cdot 72 + 0.50 \cdot 90}{0.20 + 0.30 + 0.50} = \frac{16.6 + 21.6 + 45}{1} = 83.2
\]

Sect. 3 – 3, #4: \[ s^2, \quad s \]

Sec. 3 – 4, #14: \[ z_{\text{Math}} = \frac{60 - 54}{3} = \frac{6}{3} = 2, \quad z_{\text{Hist}} = \frac{80 - 75}{2} = \frac{5}{2} = 2.5, \quad \text{History test} \]

Sect. 3 – 4, #24
12: \(0 + 0.5)/7 = 0.07 \rightarrow 7^{th}\)
28: \(1 + 0.5)/7 = 0.21 \rightarrow 21^{st}\)
35: \(2 + 0.5)/7 = 0.36 \rightarrow 36^{th}\)
42: \(3 + 0.5)/7 = 0.50 \rightarrow 50^{th}\)
47: \(4 + 0.5)/7 = 0.64 \rightarrow 64^{th}\)
49: \(5 + 0.5)/7 = 0.79 \rightarrow 79^{th}\)
50: \(6 + 0.5)/7 - 0.93 \rightarrow 93^{rd}\)


Sect. 3 – Rev, #10:

\[
CVar_{\text{books}} = \frac{5}{16} = 0.3125
\]

\[
CVar_{\text{age}} = \frac{8}{43} = 0.186 \quad \rightarrow \quad \text{Number of books is more variable.}
\]

Recall the Empirical Rule:

In algebraic form the above translates to:

- 68% of the values lie within 1 standard deviation of the mean
- 95% of the values lie within 2 standard deviations from the mean, and
- 99.8% of the values lie within 3 standard deviations from the mean.

In our case, $\mu = 29.7$ and $\sigma = 6$. From the above, 68% lies within one standard deviation, or $(29.7-6, 29.7+6) = (23.7, 35.7)$. 