

1) The interquartile range Compare the two interquartile ranges.

The five number Summary for the day and night classes is.

	Min	Q_1	median	Q_3	maximum
Day	32	56	74.5	82.5	99
Night	25.5	78	81	89	98

$$IQR = Q_3 - Q_1$$

$$IQR = 82.5 - 56 = 26.5$$

$$\text{Lesser than outlier range} = Q_1 - 1.5 \times IQR$$

$$= 56 - 1.5 \times 26.5$$

$$= 16.25$$

The outlier range of 16.25 is significantly lower than the value of 32.

$$IQR = Q_3 - Q_1$$

$$= 89 - 78$$

$$IQR = 11$$

$$\begin{aligned}\text{Greater outlier range} &= Q_3 + 1.5 \times IQR \\ &= 89 + 1.5 \times 11 \\ &= 105.5\end{aligned}$$

Compared to the outlier range of 105.5 the value of 98 is relatively lower indicating it is within the expected range.