a. The interquartile range. Compare the two interquartile ranges.

b. Any outliers in either set.

The five number summary for the day and night classes is

	Minimum	Q_1	Median	Q_3	Maximum
Day	32	56	74.5	82.5	99
Night	25.5	78	81	89	98

Let's calculate the **Interquartile Range (IQR)** for both the **Day** and **Night** classes using the five-number summaries provided:

IQR = Q3 − Q1

Day Class

- Q1 = 56
- Q3 = 82.5
- **IQR = 82.5 − 56 = 26.5**

Night Class

- Q1 = 78
- Q3 = 89
- **IQR = 89 − 78 = 11**

Comparison

- The **Day class** has a **wider spread** in the middle 50% of its data (IQR = 26.5), suggesting more variability.
- The **Night class** has a **tighter distribution** (IQR = 11), indicating the scores are more clustered around the center.

Day Class

- Q1 = 56
- Q3 = 82.5
- IQR = 26.5

Lower Bound: $$ 56 - 1.5 \times 26.5 = 56 - 39.75 = 16.25 $$ **Upper Bound**: $$ 82.5 + 1.5 \times 26.5 = 82.5 + 39.75 = 122.25 $$

Day Class Outliers:

- Minimum = 32 → **not an outlier**

- Maximum = 99 → **not an outlier** ✅ **No outliers in the Day class**

Night Class

- Q1 = 78
- Q3 = 89
- IQR = 11

Lower Bound: $$ 78 - 1.5 \times 11 = 78 - 16.5 = 61.5 $$ **Upper Bound**: $$ 89 + 1.5 \times 11 = 89 + 16.5 = 105.5 $$

Night Class Outliers:

- Minimum = 25.5 → **lesser outlier**
- Maximum = 98 → **not an outlier** ⚠ **One lesser outlier in the Night class: 25.5**

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