a. the interquartile range. compare the two interquartile ranges.

b. any outliers in either set the five-number summery for the day and night classes is

**Minimum Q1 Median Q3 Maximum**

Day 32 56 74.5 82.5 99

**Night** 25.5 78 81 89 98

### Interquartile Range (IQR)

The formula for IQR is:

IQR=Q3−Q1

For **Day Classes**:

IQR Day=82.5−56=26.5

For **Night Classes**:

IQR Night=89−78=11

### Comparison

* The IQR for day classes is **26.5**, which is significantly higher than the IQR for night classes, which is **11**. This indicates that the day classes have a wider spread of data within the central 50% compared to the night classes.

### Outliers

To find outliers, we'll use the rule:

Lower Bound = Q1−1.5×IQR

Upper Bound = Q3+1.5×IQR

#### **Day Classes:**

**Lower Bound Day** = 56−1.5×26.5 = 16.25

**Upper Bound Day** = 82.5+1.5×26.5= 122.25

Since all data points for day classes (32, 56, 74.5, 82.5, 99) fall within this range, there are no outliers in the day classes.

#### **Night Classes:**

**Lower Bound Night** = 78−1.5×11= 61.5

**Upper Bound Night** = 89+1.5×11= 105.5

Since the minimum value for night classes is 25.5, which is below the lower bound of 61.5, 25.5 is an outlier.

### Summary

**Day Classes:**

* **IQR:** 26.5
* **Outliers:** None

**Night Classes:**

* **IQR:** 11
* **Outliers:** 25.5

The day classes have a wider distribution and no outliers, while the night classes have a narrower distribution with one outlier (25.5).