### Measures of Position for Ungrouped Data: Quartiles

**Quartiles:** the score points which divide a distribution into four equal parts

$$\text{Position of } Q_k = \frac{k}{4}(n+1)_{th}$$

**Interquartile Range:** the difference between $Q_3$ and $Q_1$

$$IQR = Q_3 - Q_1$$

**Practice Exercises**

Solve the following problem completely.
Given 50 multiple-choice items in their final test in Mathematics, the scores of 16 students are the following:

| 28 | 46 | 22 | 20 | 18 | 34 | 36 | 35 |
|----|----|----|----|----|----|----|----|
| 45 | 48 | 16 | 22 | 27 | 31 | 30 | 25 |

Calculate the following using the given data.

1. $Q_2$
2. $Q_3$
3. $Q_1$
4. $IQR$

**Problem Set**

Solve the following problem completely.
Mrs. Marasigan is a veterinarian. One morning, she asked her secretary to record the service time for 20 customers. The following are the service times in minutes.

| 20 | 35 | 55 | 28 | 46 | 32 | 25 | 56 | 51 | 48 |
|----|----|----|----|----|----|----|----|----|----|
| 55 | 28 | 37 | 60 | 47 | 52 | 17 | 23 | 41 | 32 |

Calculate the following using the given data.

1. $Q_2$
2. $Q_3$
3. $Q_1$
4. $IQR$