

# Constructing a frequency distribution and a frequency polygon

Problem Explanation

## Constructing a frequency distribution and a frequency polygon

QUESTION

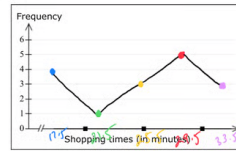
Here are the shopping times (in minutes) for each of sixteen shoppers at a local grocery store.

| Shopping times (in minutes) |    |
|-----------------------------|----|
| 24                          | 18 |
| 33                          | 34 |
| 35                          | 19 |
| 28                          | 27 |
| 18                          | 26 |
| 31                          | 31 |
| 23                          | 30 |
| 29                          |    |

(a) Complete the grouped frequency distribution for the data. (Note that the class width is 4.)

| Shopping times (in minutes) | Frequency |
|-----------------------------|-----------|
| 15.5 to 19.5                | 4         |
| 19.5 to 23.5                | 1         |
| 23.5 to 27.5                | 3         |
| 27.5 to 31.5                | 5         |
| 31.5 to 35.5                | 3         |

(b) Using the classes from part (a), draw the frequency polygon for the data. Note that you can add or remove classes from the figure. Label each class with its midpoint.



Find Midpoints of each class

$$\frac{15.5 + 19.5}{2} = 17.5$$

$$\frac{19.5 + 23.5}{2} = 21.5$$

$$\frac{23.5 + 27.5}{2} = 25.5$$

$$\frac{27.5 + 31.5}{2} = 29.5$$

$$\frac{31.5 + 35.5}{2} = 33.5$$