

## Cumulative & Relative Frequency

| Frequency, Cumulative Frequency & Relative Frequency |                                                                                                  |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Frequency                                            | The rate at which something occurs over a period of time or in a given sample                    |
| Cumulative Frequency                                 | The total of all frequencies so far in a given sample                                            |
| Relative Frequency                                   | The number of times an event occurs divided by the total number of trials or people in a sample. |

**Instructions:** Answer the questions below.

### Palm Trees

The table below shows the height of palm trees along Sunshine beach.

| Height (cm) | Frequency | Relative Frequency | Cumulative Frequency |
|-------------|-----------|--------------------|----------------------|
| 276-300     | 6         |                    |                      |
| 301-325     | 17        |                    |                      |
| 326-350     | 28        |                    |                      |
| 351-375     | 34        |                    |                      |
| 376-400     | 15        |                    |                      |

### Questions

|                                                          |  |
|----------------------------------------------------------|--|
| 1. How many trees are no more than 3.5m?                 |  |
| 2. What percentage of trees are above 3.76m?             |  |
| 3. Find the percentage of trees between 2.76m and 3.25m. |  |

## Thriller Park

The table below the ages of visitors at an amusement park on average.

| Age Group | Frequency | Relative Frequency | Cumulative Frequency | Cumulative Relative F. |
|-----------|-----------|--------------------|----------------------|------------------------|
| 18-24     | 16        |                    |                      |                        |
| 25-34     | 22        |                    |                      |                        |
| 35-44     | 30        |                    |                      |                        |
| 45-54     | 26        |                    |                      |                        |
| 55-64     | 32        |                    |                      |                        |
| 65-74     | 22        |                    |                      |                        |
| Over 75   | 12        |                    |                      |                        |

## Questions

1. How many visitors are over 34 years old?

2. How many visitors are 25 to 44 years old?

3. How many visitors are below 55 years old?

4. Find the number of visitors 35 years old or above using cumulative frequency. *Hint:* Subtract the number of visitors below 35 years old from the total number of visitors.

5. Find the percentage of visitors above 44 years old using relative cumulative frequency. *Hint:* Subtract the percentage of visitors 44 years old or below from the total of 1.

## Cumulative & Relative Frequency

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|------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Frequency                                            | The rate at which something occurs over a period of time or in a given sample                    |
| Cumulative Frequency                                 | The total of all frequencies so far in a given sample                                            |
| Relative Frequency                                   | The number of times an event occurs divided by the total number of trials or people in a sample. |

**Instructions:** Answer the questions below.

### The Age of My Parents

The table below shows the ages of parents whose children attend St. Mary's Primary School.

| Age range | Frequency | Relative Frequency | Cumulative Frequency |
|-----------|-----------|--------------------|----------------------|
| 25-29     | 37        |                    |                      |
| 30-34     | 43        |                    |                      |
| 35-39     | 16        |                    |                      |
| 40-44     | 9         |                    |                      |
| 45-49     | 3         |                    |                      |

### Questions

|                                                  |  |
|--------------------------------------------------|--|
| 1. How many parents are there?                   |  |
| 2. How many parents are aged below 35?           |  |
| 3. Find the percentage of parents between 40-49. |  |

## Chemistry Test Scores

The table below shows the grades for a Year 9 Chemistry exam.

| Grade | Frequency | Relative Frequency | Cumulative Frequency | Cumulative Relative F. |
|-------|-----------|--------------------|----------------------|------------------------|
| Fail  | 6         |                    |                      |                        |
| C–    | 4         |                    |                      |                        |
| C     | 5         |                    |                      |                        |
| C+    | 12        |                    |                      |                        |
| B–    | 24        |                    |                      |                        |
| B     | 32        |                    |                      |                        |
| B+    | 17        |                    |                      |                        |
| A–    | 11        |                    |                      |                        |
| A     | 8         |                    |                      |                        |
| A+    | 3         |                    |                      |                        |

### Questions

- How many students sat the exam?
- How many students scored a C+ on the exam?
- How many students scored below an A?
- Find the percentage of students who failed the chemistry exam.
- Find the number of students who managed to get at least a B on the exam using cumulative frequency.
- Find the percentage of students who scored a B+ or above using cumulative relative frequency.