

FREQUENCY TABLE

A **frequency table** is a table with two columns.

One column lists , and another for the

(how many items fit into each category).

Example
A hospital is analyzing the ages of patients admitted for routine check-ups in the past month to better understand the age demographics of their visitors.

24 26 29 31 33 36
36 38 38 42 45 47
48 50 52 54 56 59
60 61 63 65 65 67
70 73 75 77 79 82

Age Range	Frequency
20-29	
30-39	
40-49	
50-59	
60-69	
70-79	
80-89	

Example

A local movie theater chain wants to understand which genres of movies are most popular among their customers to guide future movie screenings. They collect data on ticket sales for different genres over the past three months. The data is summarized in the following frequency table:

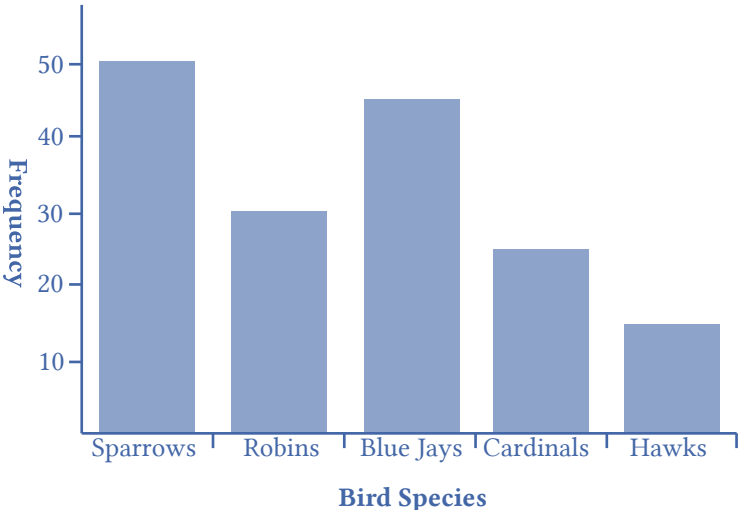
Genre	Frequency (Tickets Sold)
Action	102
Comedy	85
Drama	76
Horror	58
Sci-Fi	64
Romance	43

BAR GRAPH

A is a graph that displays a bar for each category with the length of each bar indicating the frequency of that category.

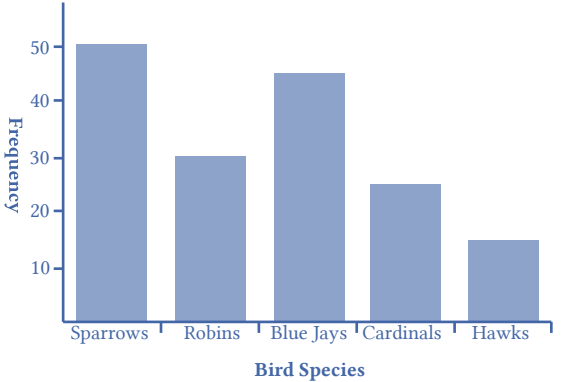
Example
 A local wildlife reserve is studying the behavior of different bird species visiting their park. Over the course of a month, park rangers record the number of sightings for five common bird species. They want to use this data to decide which areas of the park to focus conservation efforts on, based on which species are most commonly seen. The data collected is shown below:

Bird Species	Frequency
Sparrows	50
Robins	30
Blue Jays	45
Cardinals	25
Hawks	15



PARETO CHART

A **Pareto chart** is a bar graph ordered from

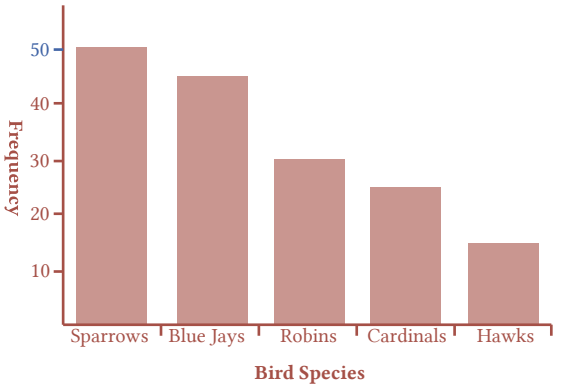


PIE CHART

A is a circle with wedges cut of varying sizes marked out like slices of pie or pizza.

The relative sizes of the wedges correspond to the relative frequencies of the categories.

Pareto chart

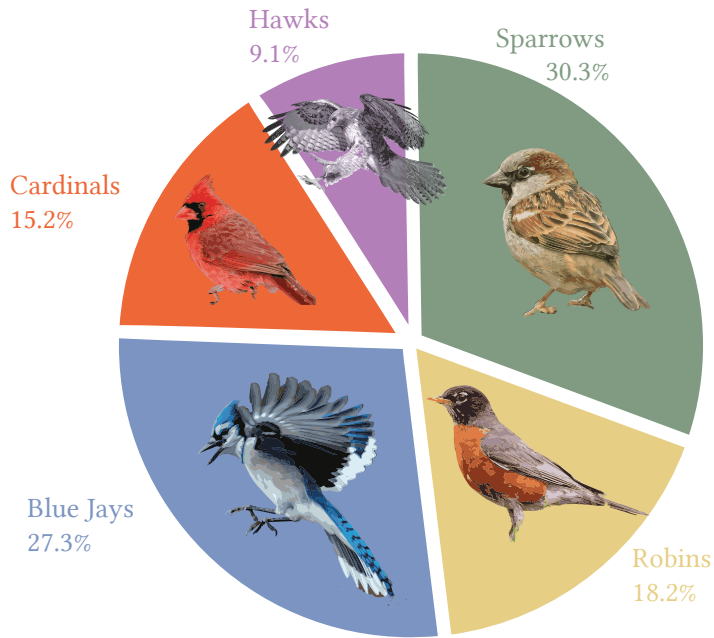
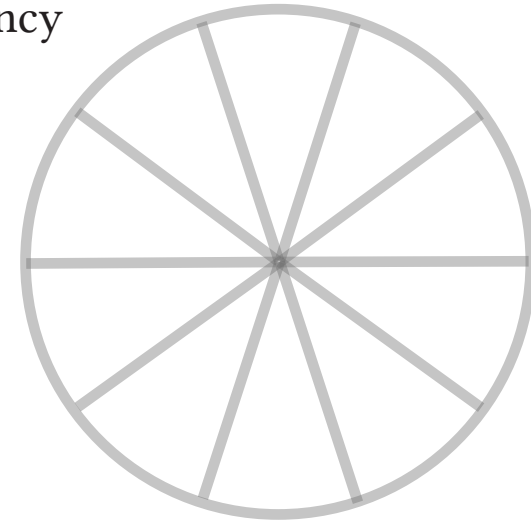


Bird Species	Frequency
Sparrows	50
Robins	30
Blue Jays	45
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Hawks	15

Question

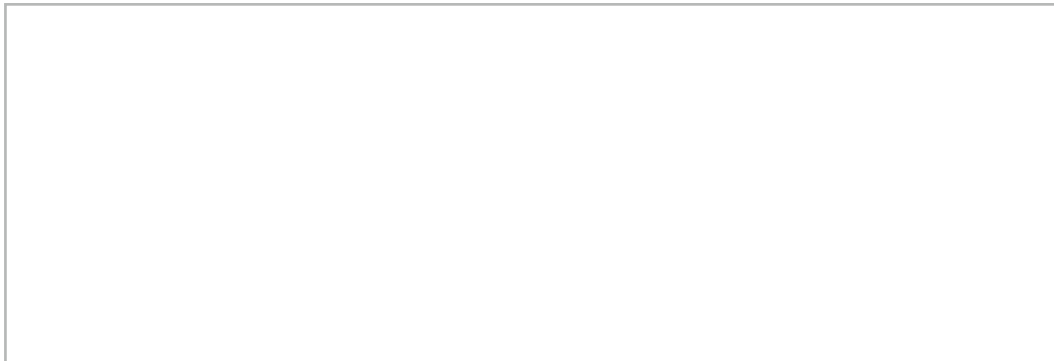
Create a pie chart for the following frequency table:

Workshop Type	Frequency
Painting	3
Sculpture	1
Music	2
Dance	4



PICTOGRAM

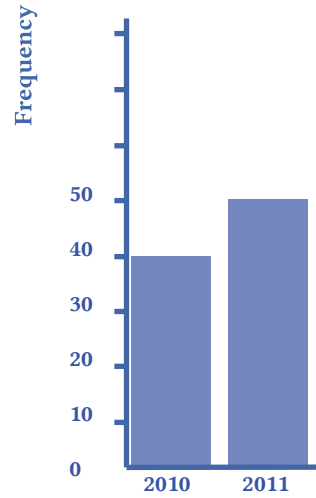
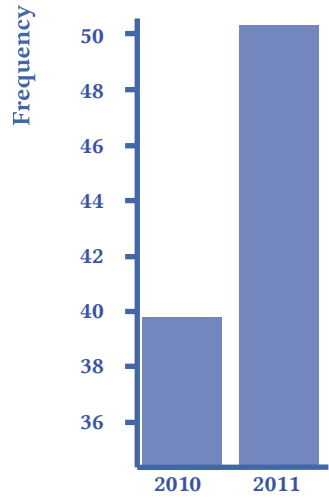
A **pictogram** is a statistical graphic in which



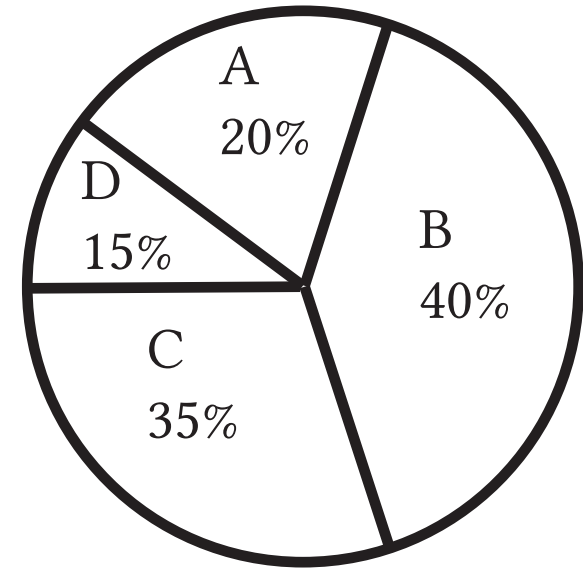
Beware:

It is easy to be misled with charts

Can you compare the following bar charts?
What is misleading here?

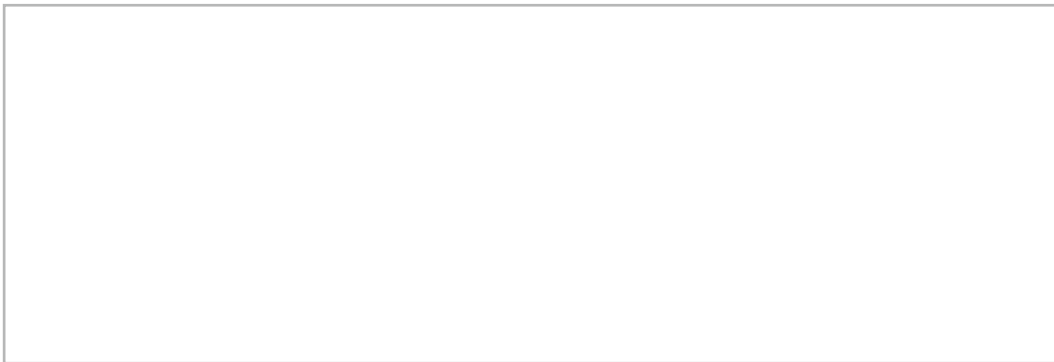


What's wrong with this pie chart?



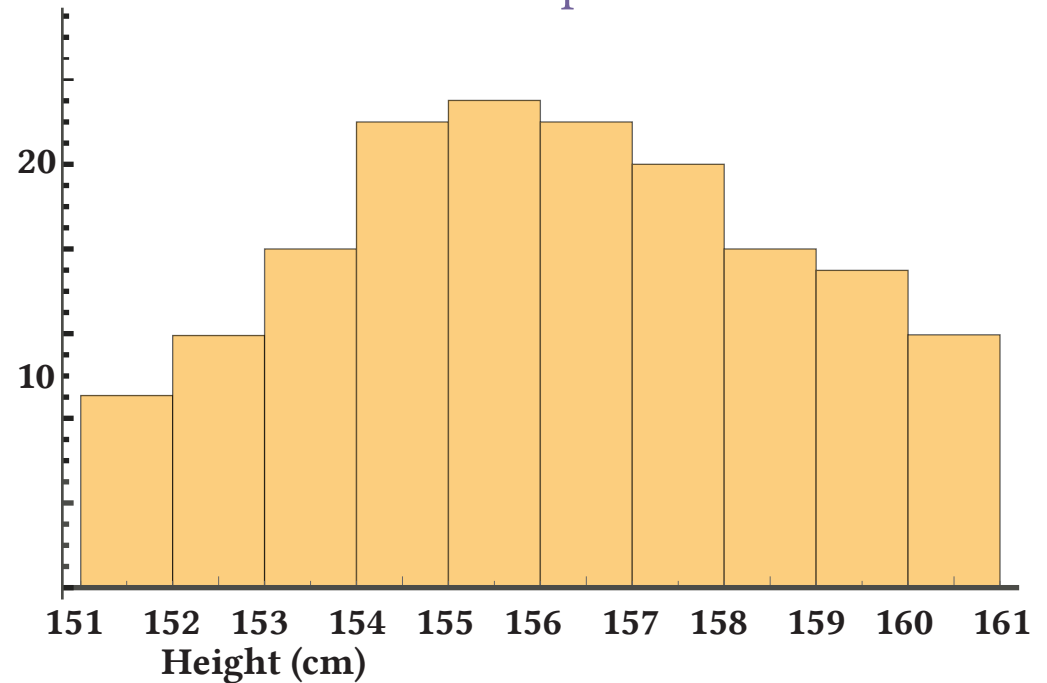
HISTOGRAM

A **histogram** is like a bar graph,
but where the



Frequency

Example



CLASS INTERVALS

Class intervals are .

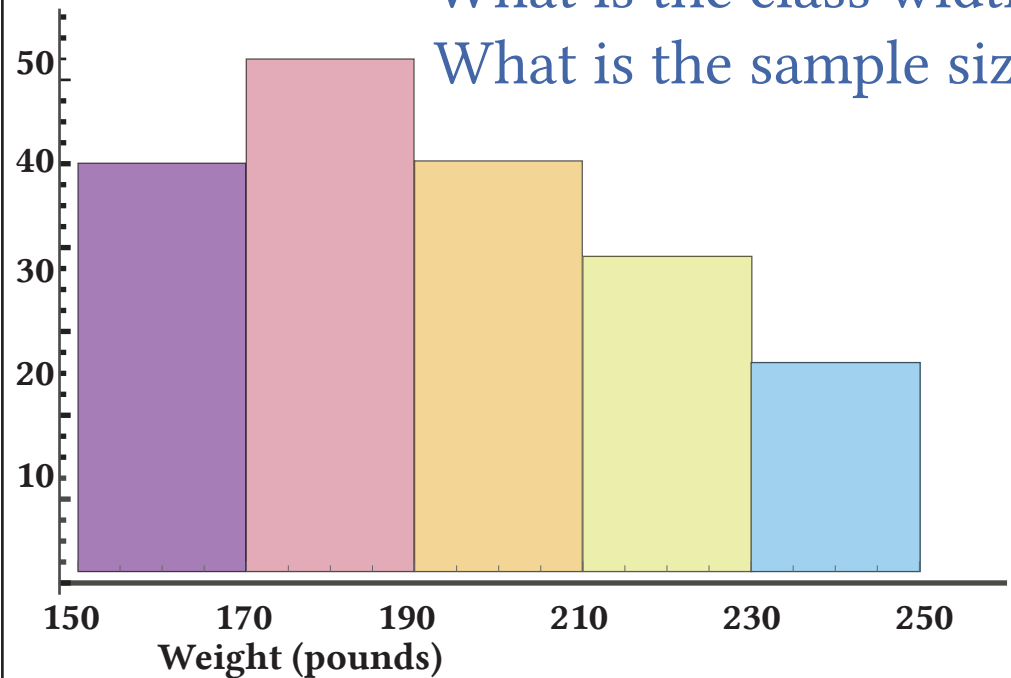
In general, we define class intervals so that each interval is .

For example, if the first class contains values from 120-129, the second class should include values from 130-139.

We have somewhere between 5 and 20 classes, typically, depending upon the number of data we're working with.

Frequency

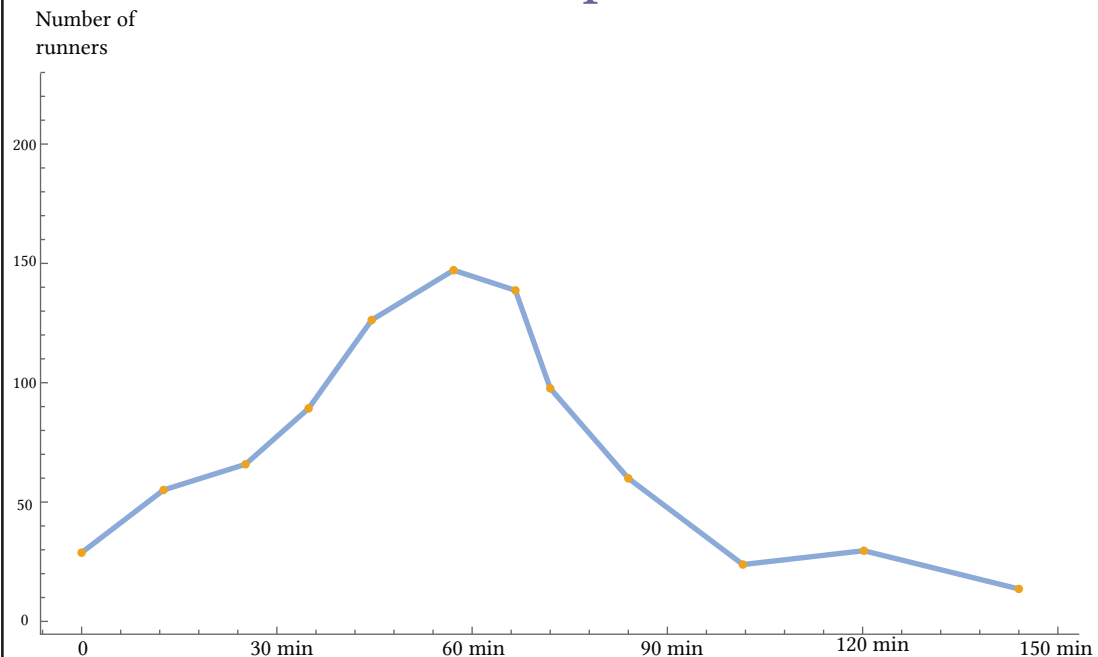
What is the class width?
What is the sample size?



FREQUENCY POLYGON

An alternative representation is a **frequency polygon**. A frequency polygon starts out like a histogram, but instead of drawing a bar, a point is placed in the midpoint of each interval at height equal to the frequency. Typically the points are connected with straight lines to emphasize the distribution of the data.

Example



Question

A tourism agency conducted a survey to analyze the ages of participants in a group travel program. The ages of 30 participants are listed below:

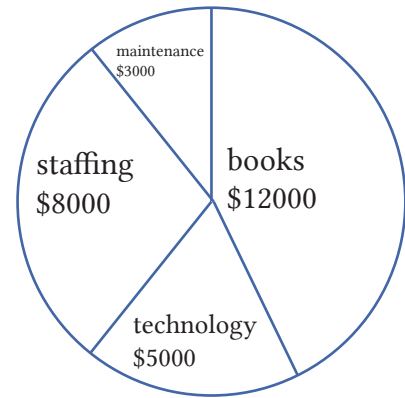
18, 21, 22, 25, 27, 28, 29, 31, 32, 34, 35, 37, 39, 41, 43, 45, 46, 48, 50, 52, 53, 54, 56, 58, 60, 62, 64, 66, 68

Complete the frequency distribution for the data.

Age	Frequency
20-29	
30-39	
40-49	
50-59	
60-69	
70-79	

Question

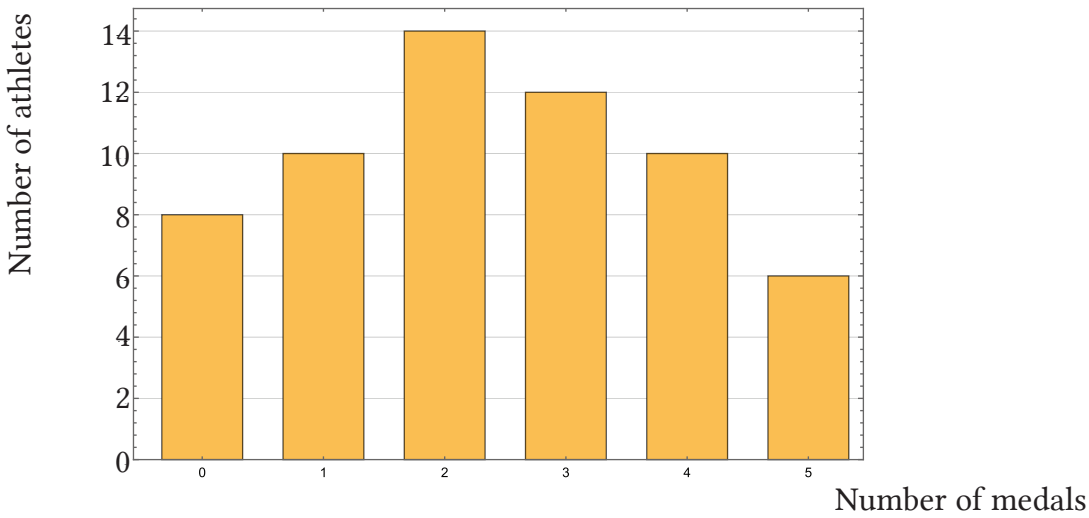
A local library tracks its annual spending in different areas: Books, Technology, Staffing, and Maintenance. For this year, the spending in each category is as follows:



Calculate the percentage of the total budget that was spent on Books.

Question

The data in the figure below represents the number of medals won by 150 athletes in a sports competition.



How many athletes won exactly 2 medals?