

Displaying Categorical or Discrete Variables

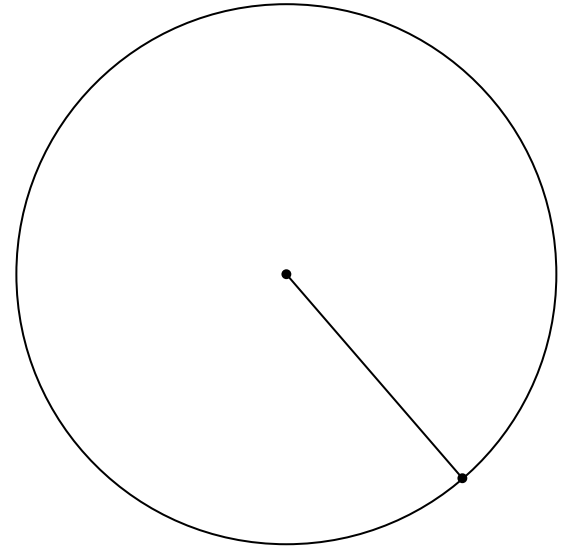
Circle Graph (Pie Graph)

- Circle divided into sectors whose areas are proportional to quantities represented.
- Central Angle is the measure of proportion in a circle graph.

$$\text{Central Angle} = 360^\circ \times \text{percent of data}$$
- Disadvantages:
 - i. If there are too many data points the graph is messy and confusing.
 - ii. Gives no actual values and frequency is lost.

Example: Using the following data on favorite colours, find the central angle and then create a circle graph of the data.

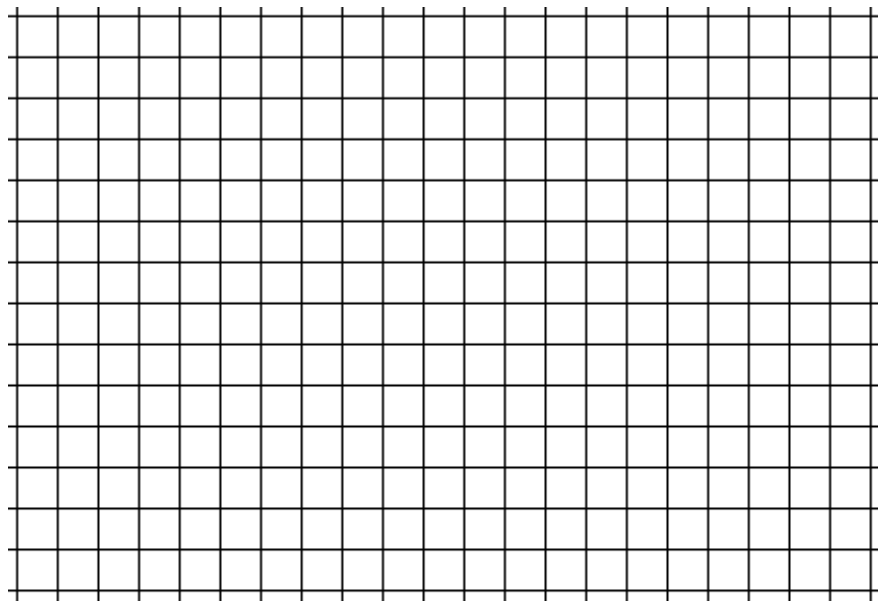
Colour	Frequency	Central Angle
Red	5	$\frac{5}{22} \times 360^\circ = 82^\circ$
Blue	6	
Yellow	2	
Purple	4	
Orange	3	
Green	2	
Total	22	360°



Bar Graph

- Must include: a title, description on each axis, height of the bars are readable from graph, spacing between bars.
- Disadvantages:
 - i. Can only be used to represent 1 variable.
 - ii. Depending on horizontal axis scale, relative frequency can be misleading.

Example: Use the frequency table above for favourite fast food in your class and display this data in a bar chart.



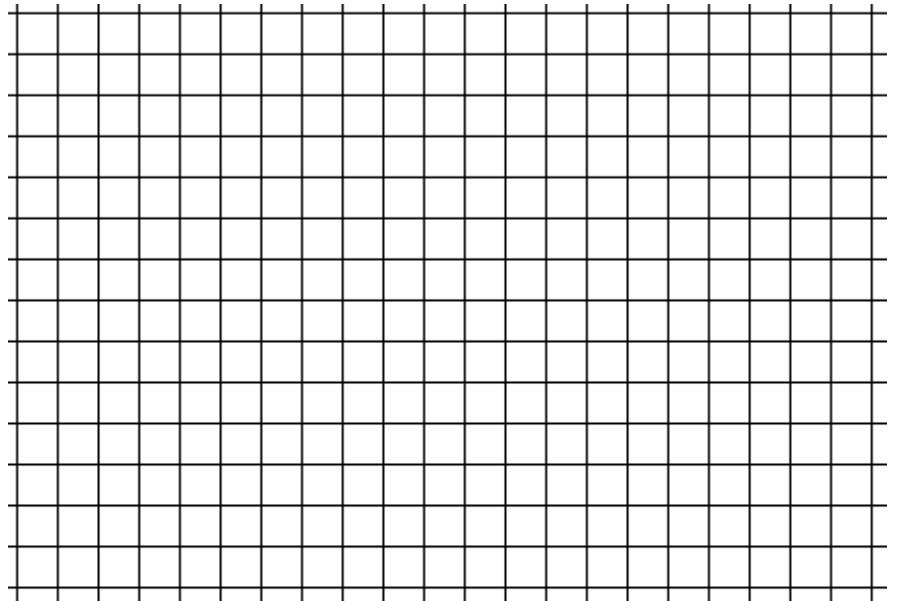
Displaying Continuous Variables

Histogram

- Similar to a bar graph.
- Horizontal axis is divided into equal intervals or bins.
- Intervals or bins must be constant.
- Must include: Title, description on axes, no spaces between bars.
- Disadvantages: Specific data points are lost due to intervals.

Example: Using the frequency table below, create a histogram to display this data.

Marks	Number of Students
0-10	0
10-20	1
20-30	1
30-40	4
40-50	4
50-60	8
60-70	7
70-80	11
80-90	6
90-100	5



Slope and Line Graphs

What is slope?

Slope is the _____ of the _____ of a _____.

Negative Slope

-Goes _____ to the right



Positive Slope

-Goes _____ to the right



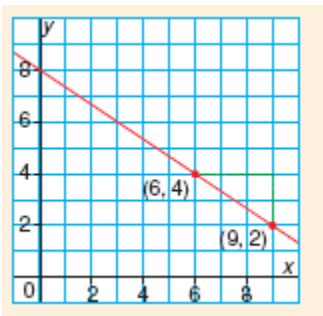
The equation of a line:

$$y = mx + b$$

m is the _____
m = _____

b is the _____
where the line crosses the _____

Determine the equation of the line below:



First choose two points and find the slope:

Then sub in the slope and one point into $y = mx + b$ to find the y-intercept:

Therefore, the equation of the line is: