

1.7 Displaying Data

“A picture is worth a thousand words.” This saying can be related to graphs.

A graph is a visual representation of data that displays the relationship among the variables.

Graphs can summarize data and present data more clearly and concisely than a table or written text.

Categorical Data: qualitative, usually recorded as a label and not a number
e.g. eye colours

Continuous Data: quantitative, a number where values can exist between recorded values. i.e. decimals are allowed e.g. the weight of a person

Discrete Data: also numerical data, but no decimals allowed. There is a fixed number of possible values. e.g. number of pizza toppings

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Ex 1: State the data type:

- a) Number of mugs of coffee drank in a day *Discrete*
- b) Type of pet at home (eg. dog, cat, bird..) *Categorical*
- c) Number of pets at home *Discrete*
- d) Amount of coffee in mL drank in a day *Continuous*

May 14-12:28 PM

1.7 Displaying Data by Hand.notebook

November 14, 2016

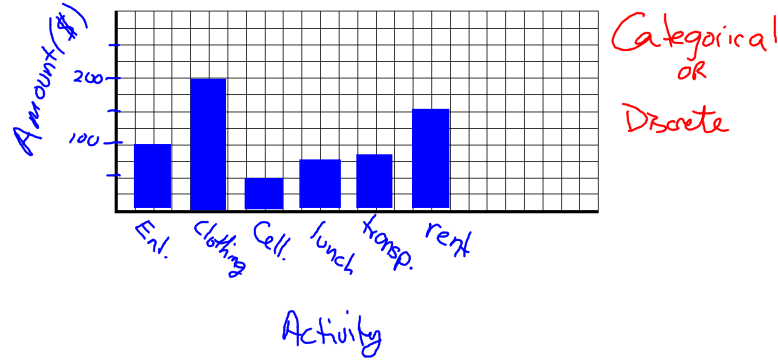
Investigation 1: Bar Graph and Circle Graph

Chris has a part-time job at a music store. The table shows Chris' expenses last month.

Expense	Amount (\$)
entertainment	\$100
clothing	\$225
cell phone	\$50
lunch	\$75
transportation	\$80
rent	\$150

Method 1: Create the Bar Graph

Create a bar graph to represent the data above. Include a title for the graph and label both axes.



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Method 2: Create the Circle Graph

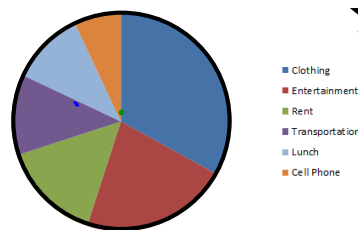
Complete the table by calculating the percent for each expense.

Expense	Amount (\$)	Percent (%)
entertainment	\$100	$\frac{100}{680} \times 100 = 14.7\% \approx 15\%$
clothing	\$225	$\frac{225}{680} \rightarrow 33\%$
cell phone	\$50	$\frac{50}{680} \rightarrow 7\%$
lunch	\$75	$\frac{75}{680} \rightarrow 11\%$
transportation	\$80	$\frac{80}{680} \rightarrow 12\%$
rent	\$150	$\frac{150}{680} \rightarrow 22\%$
TOTAL	\$680	

Create a Pie Chart using the calculated percentages.

Note: Use a protractor to draw a circle. Mark a centre and draw a straight line. From the starting line, measure each angle with the protractor.

54°
119°
25°
40°
43°
79°



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Let's discuss:

1. Which graph best displays Chris' expenses?

pie chart
 Much easier to visualize percent of money spent.

2. When is a bar graph the best choice to display data? When is a circle graph the best choice? Give examples for both.

Bar graph: When # is more valuable than percentage
 ex: comparing annual amounts of accidents

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Investigation 2: Histogram *Continuous Data*

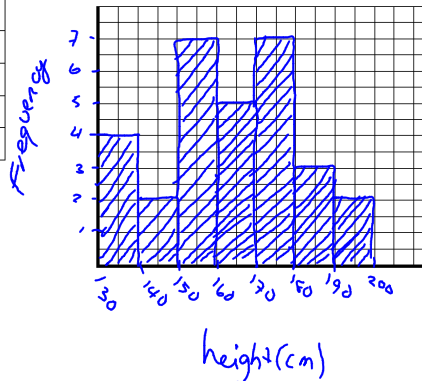
Sam measured the heights of students in her class. The heights are rounded to the nearest centimetre.

~~184 176 166 128 181 171 183 188 138 137 144 154 188 191 177~~
~~173 164 154 186 178 151 164 174 154 138 136 146 176 194 151~~

1. Complete the table. Record the number of students in each interval, and then determine each frequency. i.e. [130 – 140) includes all heights from 130 cm up to, but NOT including 140 cm

Interval	Tally	Frequency
[130 – 140)		4
[140 – 150)		2
[150 – 160)		6
[160 – 170)		5
[170 – 180)		6
[180 – 190)		3
[190 – 200)		2

2. Graph the data with Interval on the horizontal axis and Frequency on the vertical axis. Include a title for the graph and label the axes.








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Investigation 3: Pictograph *Categorical or Discrete*

Draw a pictograph to represent the following list of students in clubs using a legend where 1 stick man = 25 people

- Football = 50 students
- Band = 63 students
- Soccer = 37 students
- Musical Theater = 52 students
- Track = 35 students

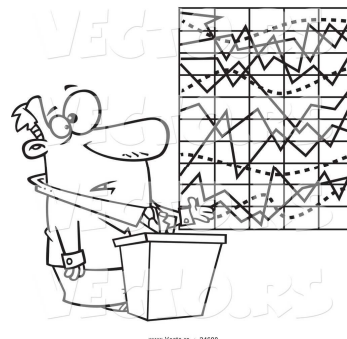
Football	
Band	
Soccer	
Musical	
Track	

Oct 12-2:10 AM

Homework:

pg. 125 # 1, 2, 4-7

Be sure to review how to make each kind of graph we worked on today.



Oct 12-3:12 AM