

So far we have used 3 kinds of graphs. Let's look at when we should use them!

Circle Graphs - Used to compare parts of a whole.

Example: Splitting budget into different categories.

Bar Graphs - Compare things in different groups. Also shows changes over time.

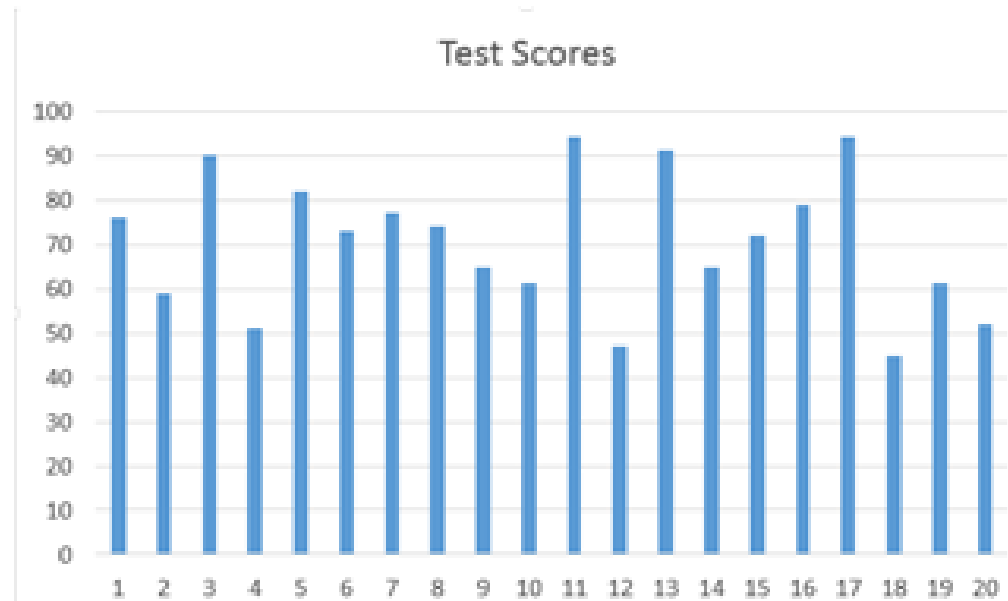
Example: Compare the number of absences in different classes.

Line Graphs - Used to track changes over time.

Example: Compare the temperature throughout the year.

On a recent math test at Xavier Academy, students obtained the following test scores. How could we display this data?

Mark
76
59
90
51
82
73
77
74
65
61
94
47
91
65
72
79
94
45
61
52



Line Graph

→ What do I compare with?

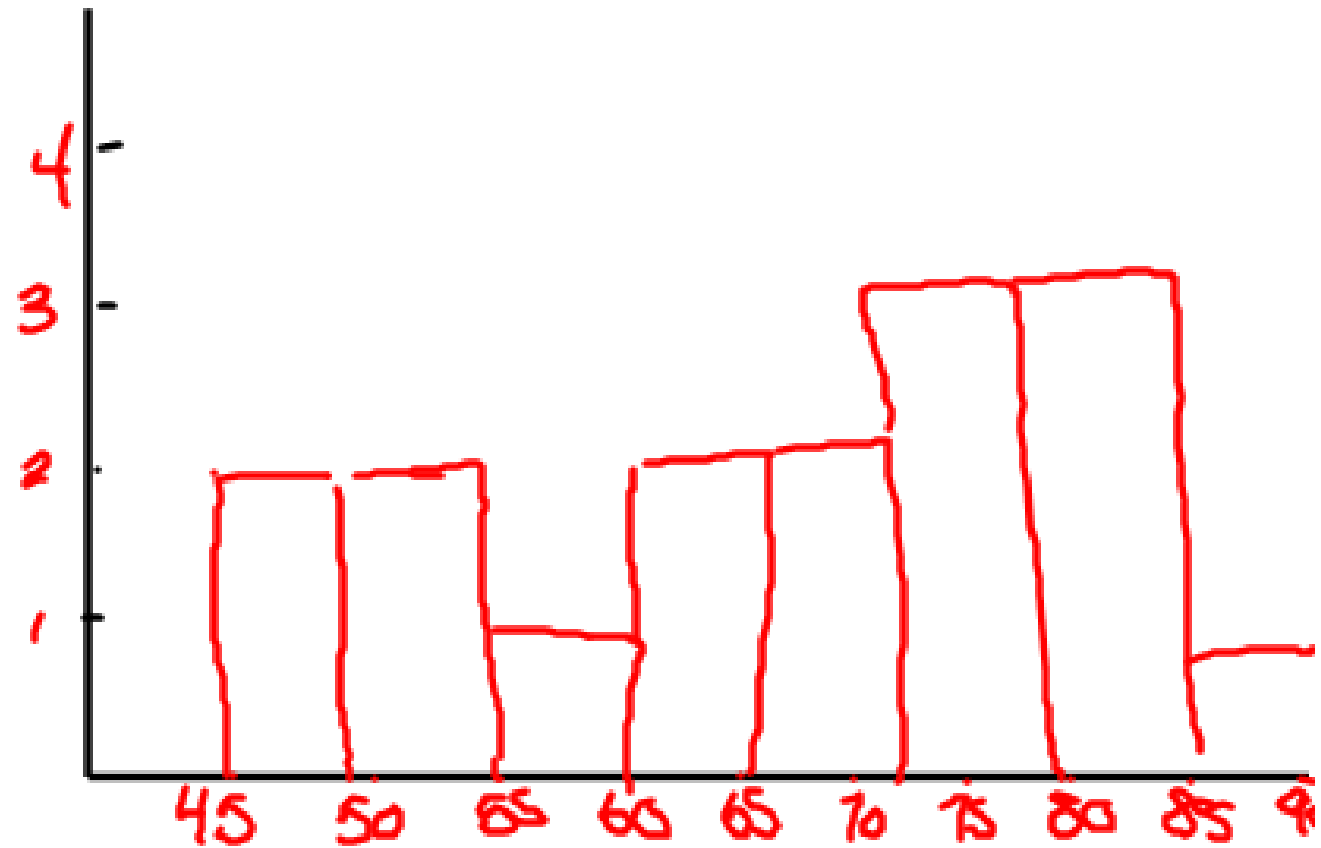
Bar Graph → Too much info

→ I don't know what to look at!

Let's make a histogram. In this graph, we group data into between 5-10 intervals, and make a bar graph.

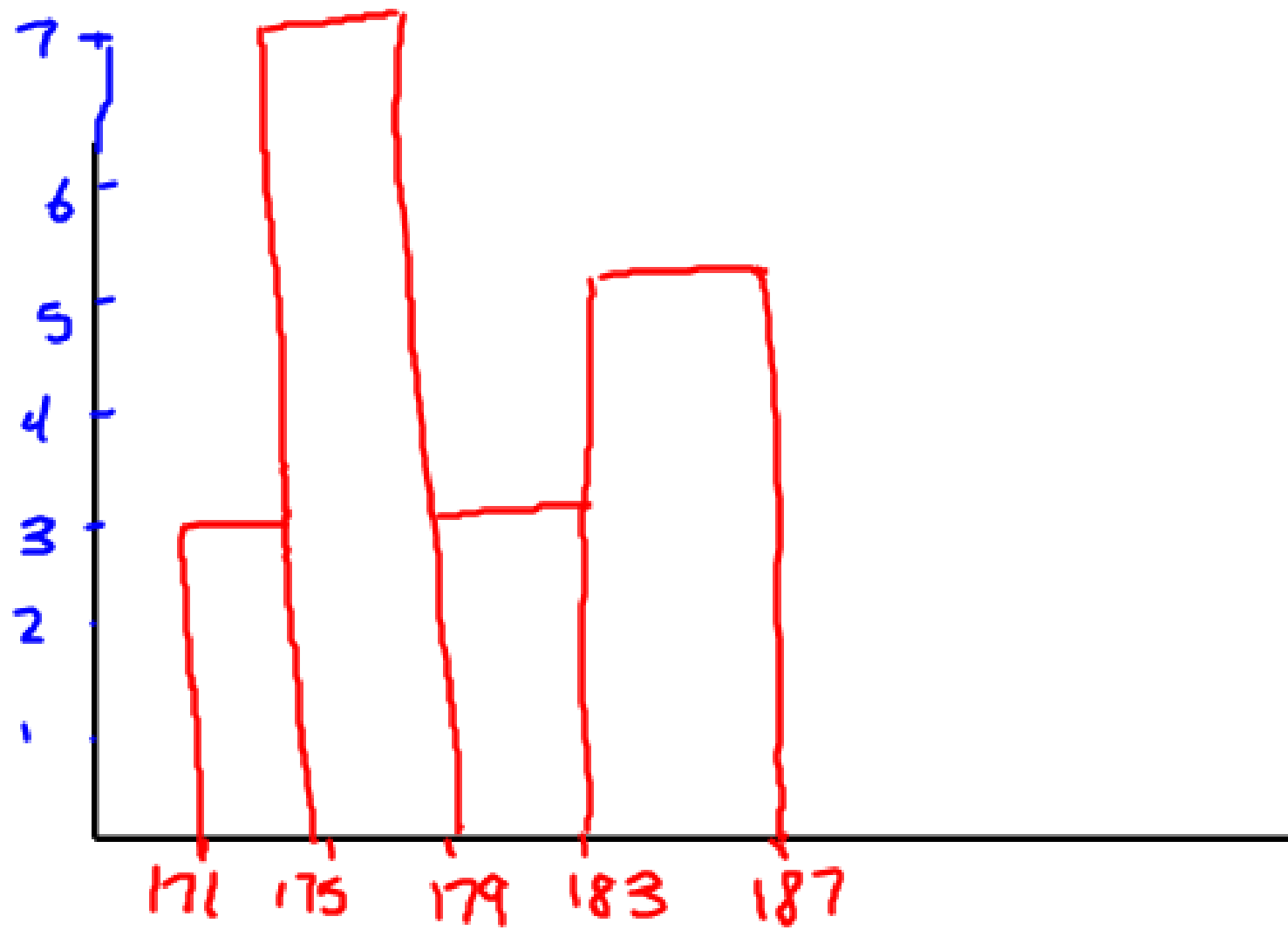
Marks

45 - 49.9	11
50 - 54.9	11
55 - 59.9	1
60 - 64.9	11
65 - 69.9	11
70 - 74.9	111
75 - 79.9	111
80 - 84.9	1
85 - 89.9	
90 - 95.9	1111



Age (years)	Hometown	Height (cm)
16	St. John's, NL	183
15	Conception Bay South, NL	175
16	Wabush, NL	178
17	St. John's, NL	185
14	Kelligrews, NL	180
15	St. John's, NL	183
15	St. John's, NL	178
15	Conception Bay South, NL	175
14	Ferryland, NL	178
16	Ferryland, NL	182
14	Corner Brook, NL	177
16	Mount Pearl, NL	175
15	St. John's, NL	183
15	Baie Verte, NL	173
16	Conception Bay South, NL	174
16	St. John's, NL	182
14	Conception Bay South, NL	171
16	Hodges Cove, NL	185

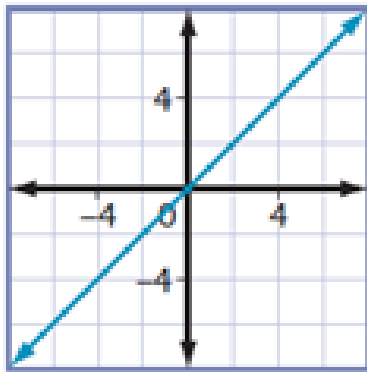
Height	Frequency
171-174.9	111
175-178.9	1111
179-182.9	111
183-186.9	1111



Let's go back to the two types of data:

continuous

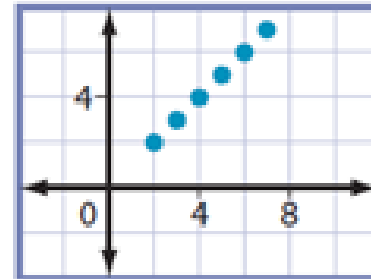
- data values on a graph that are connected



Ex → Temperature
Weight
Precipitation
Height

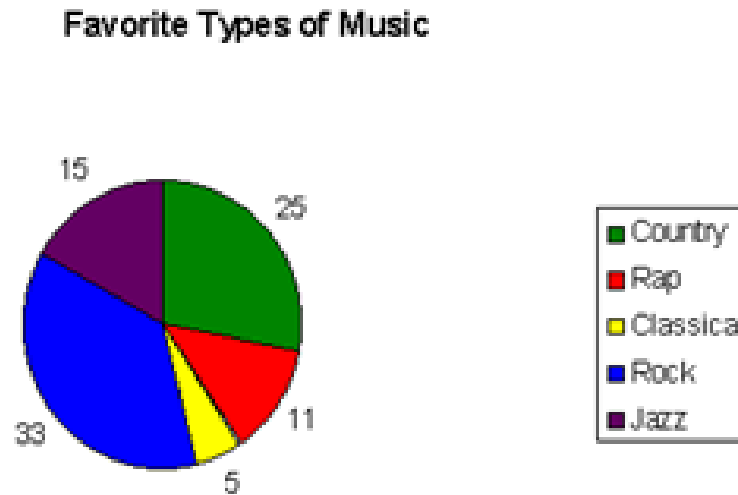
discrete

- data values that are distinct and can be counted
- data values that fall into categories

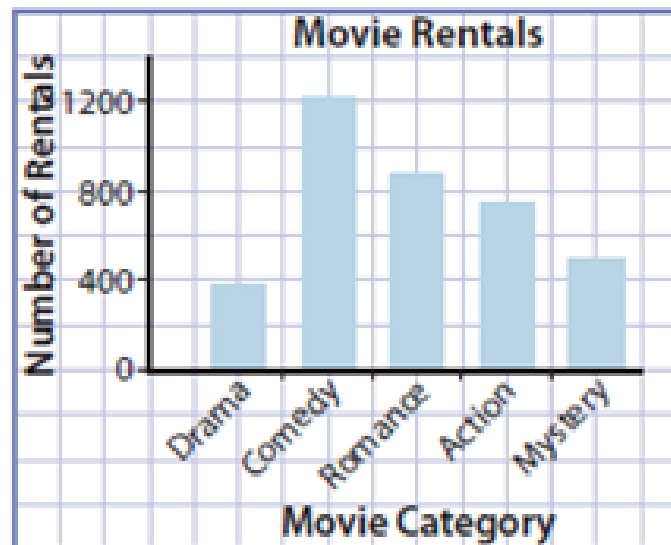


Ex → Objects
Jobs
MUSIC

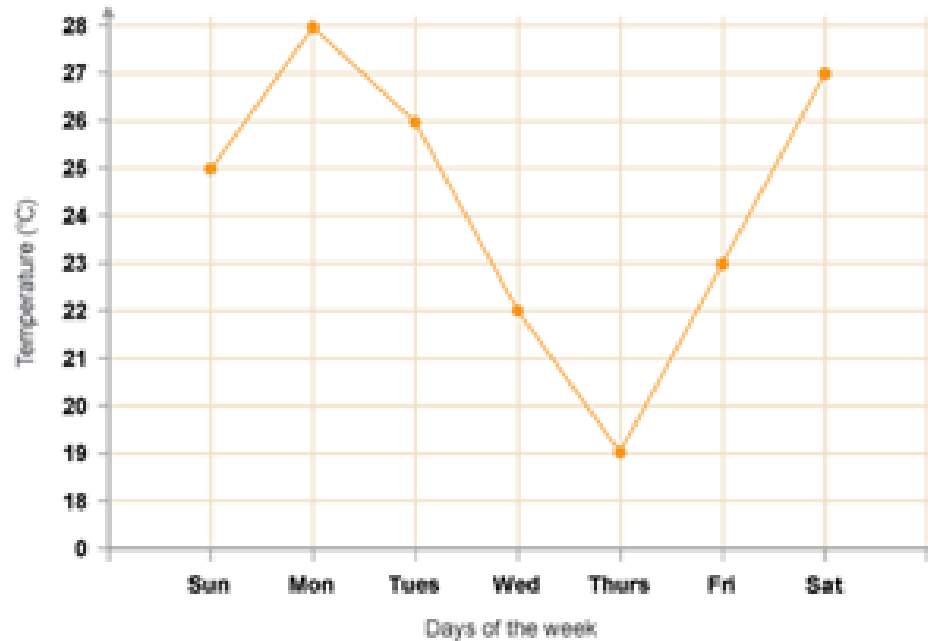
Circle graphs are used to compare parts of a whole.



Bar graphs are used to compare data that are in categories.

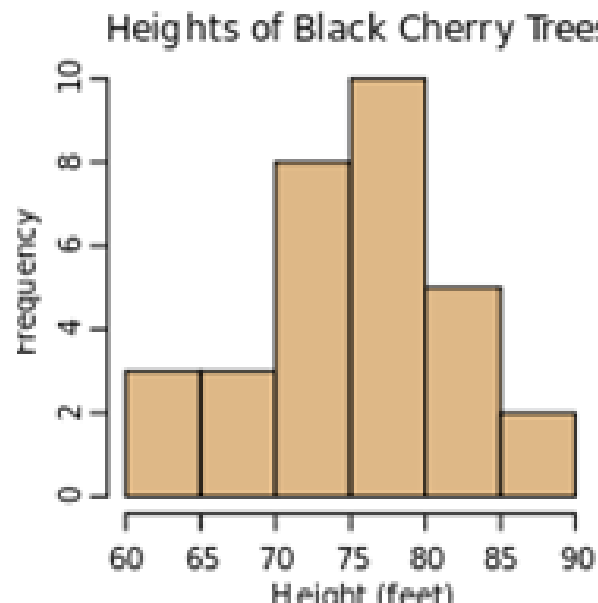


Line graphs are used to show changes over time.



C

Histograms are like bar graphs, but are used for continuous data



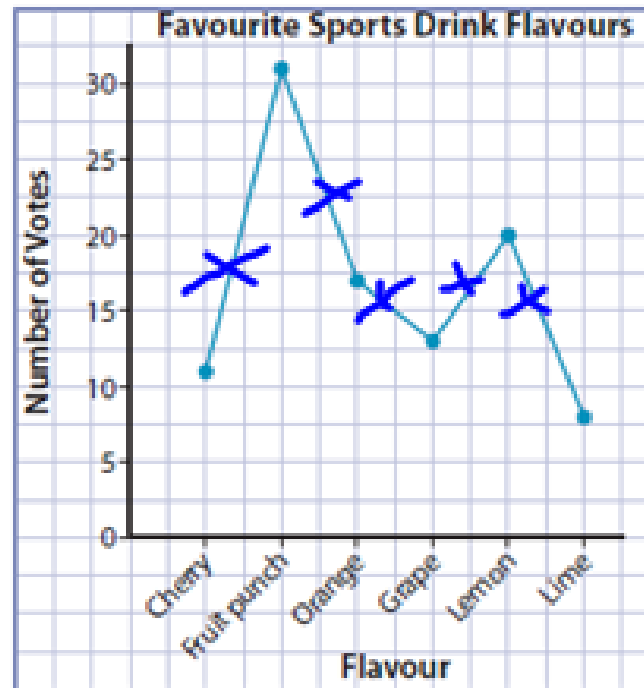
C

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3. Sean is a marketing representative for a beverage company. He surveys 100 people on their favourite flavour of sports drink. He uses this graph to represent the survey data.

a) Are the survey data continuous or discrete?
How do you know?

b) Is a line graph the best choice to represent Sean's data? If not, represent the data using a more appropriate type of graph.



Circle or Bar

4.2

Interpolating and Extrapolating Values

JAN 06, 2009					
	#N				CHANGE
M T-BILL	99.627	0.845	99.655	99.627	+0.040
M T-BILL	99.647	0.880	99.663	99.643	+0.060
Y T-BILL	99.181	0.905	99.234	99.172	+0.070
INSTRUMENT	BID	YIELD	HIGH	LOW	CHANGE
Y T-BOND	102.993	1.145	102.997	102.920	-0.007
Y T-B	107.192	1.832	107.011	106.712	-0.031
10Y T	110.907	2.876	111.332	110.846	-0.007
30Y T	123.651	3.651	124.013	123.156	+0.013

Stock Exchange...

ABACUS MINERALS & EXP
3000 @ 0.07 ▼ -0

Focus On ...

- describing the trends in a graph
- interpolating and extrapolating values from a graph
- determining if predictions and estimates are reasonable

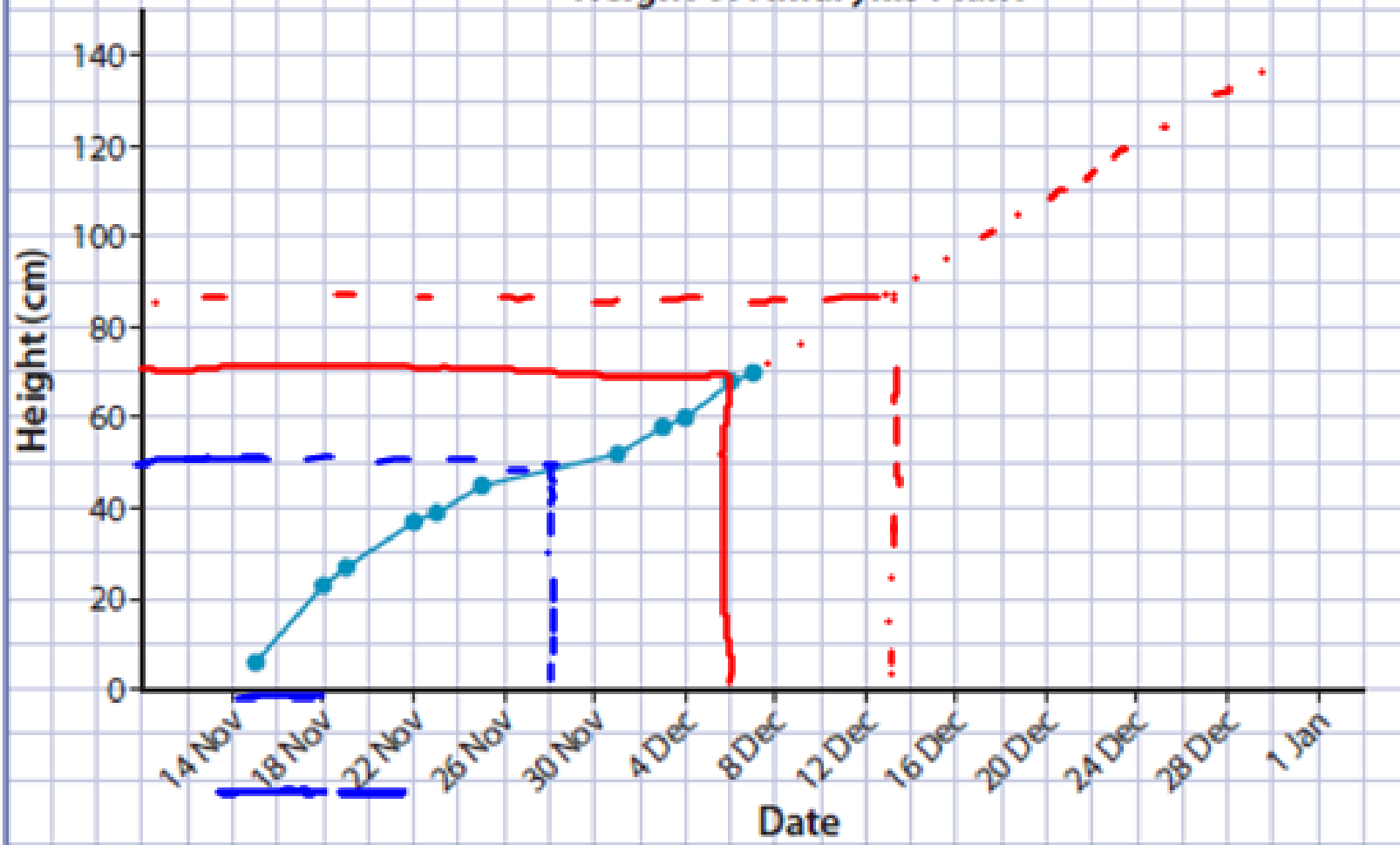
Let's look at the height of this plant over time.

Date	Height (cm)
Nov 15	6
Nov 18	23
Nov 19	27
Nov 22	37
Nov 23	39
Nov 25	45
Dec 1	52
Dec 3	58
Dec 4	60
Dec 6	67
Dec 7	70



→ Line Graph
→ Data is continuous over time.

Height of Amaryllis Plant



4 days

Nov 28?
50cm

Dec 5?
70cm

Dec 13?
85cm

Dec 25?
125cm

Interpolating is when you look INSide the data you already know to predict a value.

Extrapolating is when you look OUTside the data you know to predict a value.

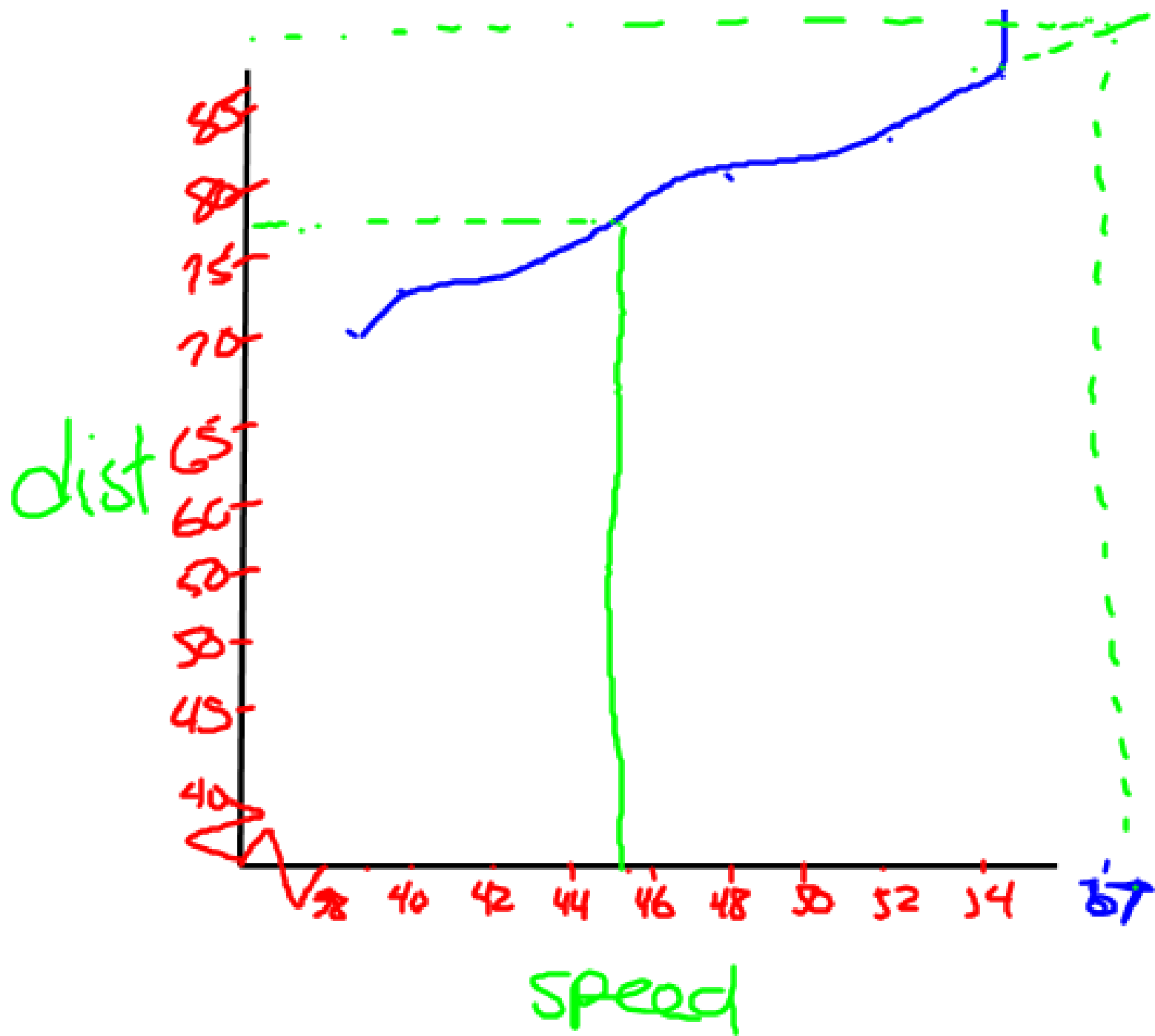
Your Turn

Cory plays baseball frequently. His coach records the speed of each of his outfield throws and the distance the ball travels.

Speed (km/h)	Distance (m)
70	39
72	40
75	44
80	49
83	54
85	57



- Represent the data using an appropriate type of graph.
- Extrapolate to predict how far the ball would likely travel if Cory threw at a speed of 87 km/h.
- Interpolate to determine how far the ball might travel if Cory threw at a speed of 77 km/h.
- What might affect your answers to parts b) and c)?



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