Lesson 7

Part A: Differentiating between a Broken-Line Graph and Bar Graph/Circle Graph /Histogram

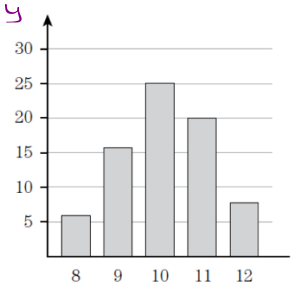
Ages of children at a summer camp

Pourcent 100%

Age (y) x	Frequency y	Relative frequency (%)
8	6	8
9	16	21
10	25	33
11	20	27
12	8	11
Total	75	100

Bar (frequency)

Ages of children at a summer camp



(% relative freq)

Circle Graph

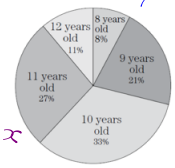


Table 5.6 – Net Income from Québec's Video Lotteries Between 2003 and 2010

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Year x	Net Income ($M) y
2003	705.8
2004	746.6
2005	809.2
2006	860.4
2007	710.8
2008	668.3
2009	670.3
2010	661.5

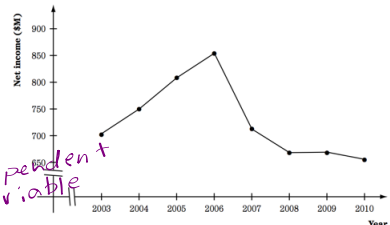
→ How Net Income (y) changes over time (x)

y is a function of x

y depends on x.

Broken Line Graph

Graph 5.4 – Net Income from Québec's Video Lotteries Between 2003 and 2010



dependent variable

(independent variable)

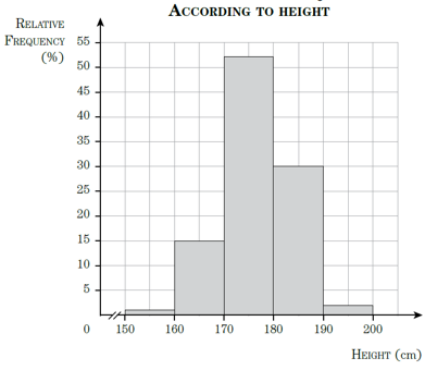
Choose broken line graph:
- when x is time
- when y depends on x.

Distribution of men in Québec according to height

Height (cm)	Men
[150, 160[	1%
[160, 170[	15%
[170, 180[	52%
[180, 190[	30%
[190, 200[	2%

Note how the broken-line graph tells a story

Distribution of men in Québec according to height



PART B: HOW TO CONSTRUCT A BROKEN-LINE GRAPH

Example: Illustrate how the net income of the below Quebec company fluctuates over the years.

TABLE 5.6 – NET INCOME FROM QUÉBEC'S VIDEO LOTTERIES BETWEEN 2003 AND 2010

YEAR x	NET INCOME ($M) y
2003	705.8
2004	746.6
2005	809.2
2006	860.4
2007	710.8
2008	668.3
2009	670.3
2010	661.5

step i. find for both variables

x

min 2003

max 2010

range
= max - min
= 2010 - 2003
= 7

go up by = range / 10 arbitrary

go up by = 7/5 = 1.4

go up by = 7/10 = 0.7

go up by = 1

y

min = 661.5

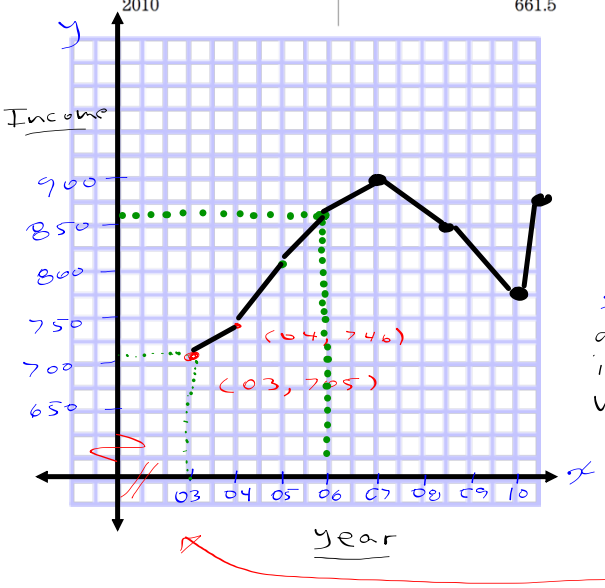
max = 860.4

range
= max - min
= 860.4 - 661.5
= 198.9

go up by = range / 5
= 198.9 / 5

go up by = 39.78

go up by = 50



step ii. Break axis if min value is a lot larger than what going up by. → and start at # close to min.

break axis

step iii. Plot each ordered pair/point (x, y)

Step iv. Draw straight lines and read graph.

Conclusions/Observation: At the beginning the company was making money, but at 2007 the company lost money

Task 1 – Cannabis Use Among the Youth

→ opinion / facts

The legalization of cannabis has been a subject of public debate ever since Justin Trudeau made it one of his campaign promises in 2015. His opponents argued that the legalization of cannabis would lead to the rise in the use of cannabis among high school students, which could pose negative consequences for their developing brains.

· verify facts w/ data

You would like to verify if the claims of the opponents were true or not.

On the website Statistics Canada, you find the following table summarizing the prevalence of cannabis use (%) by 15 to 17 year olds from 2004 to 2017[2].

Year (x)	15 to 17 (y)
2004	20.2
2005	21.1
2006	19.7
2007	19.5
2008	16.8
2009	16.8
2010	16.7
2011	18.7
2012	16.6
2013	17.7
2015	17.5
2017	14.2

cannabis use in (%) by

broken line → After task, do questions: p 135 - 137 question #5.2 - 5.3

circle and broken line → questions on pages p 138 - 142. Check Answers!

To verify the opponents' claim,

- **Illustrate the situation by using a broken-line graph**
- **Draw two conclusion from your graph**