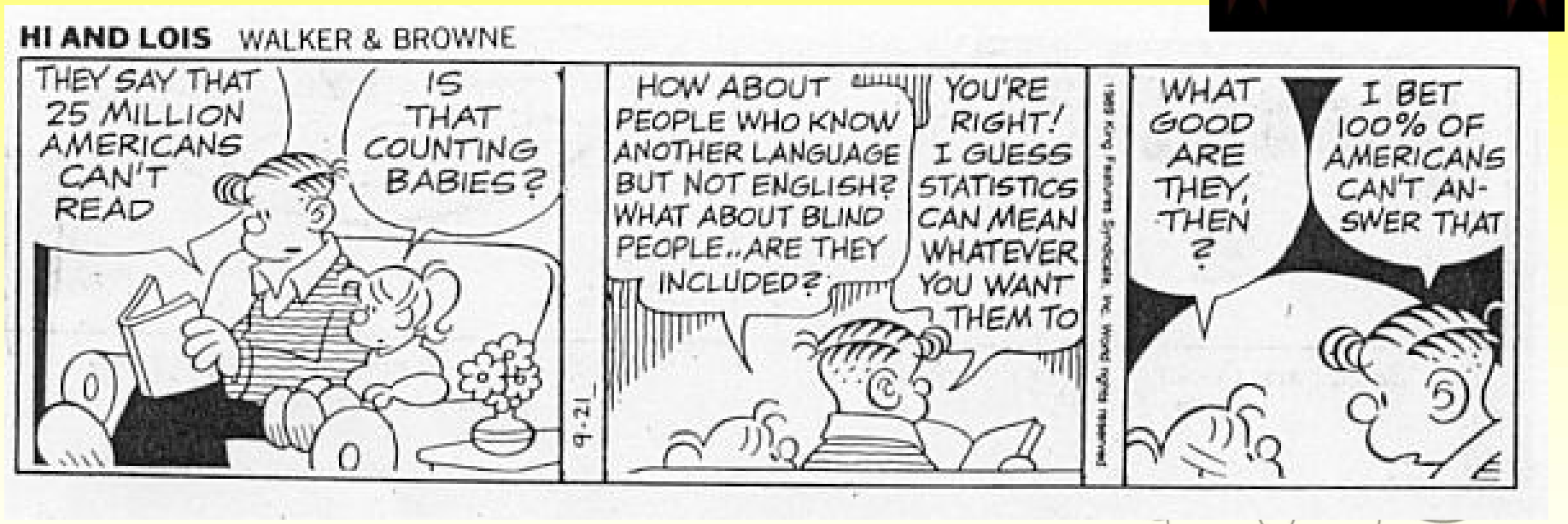
ST. JEAN DE BREBEUF MATHEMATICS



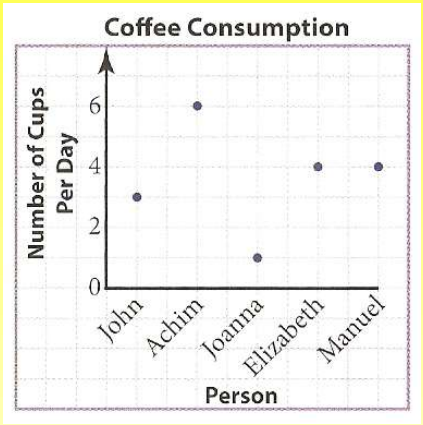
CHAPTER 3.1 TWO-VARIABLE DATA SETS

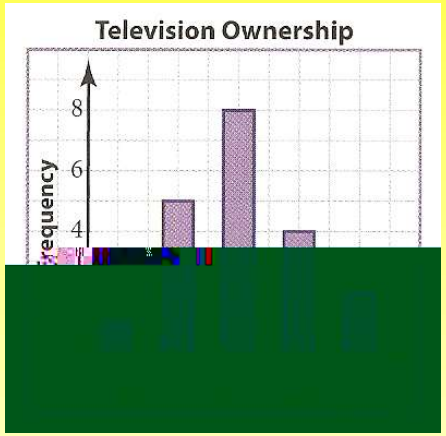
CHAPTER 3.1 TWO-VARIABLE DATA SETS

KEY CONCEPTS

For **one-variable** data sets, you know <u>one</u> attribute about each subject (ie. Height)

→ Can be graphed by **dot plot** or **bar graph**



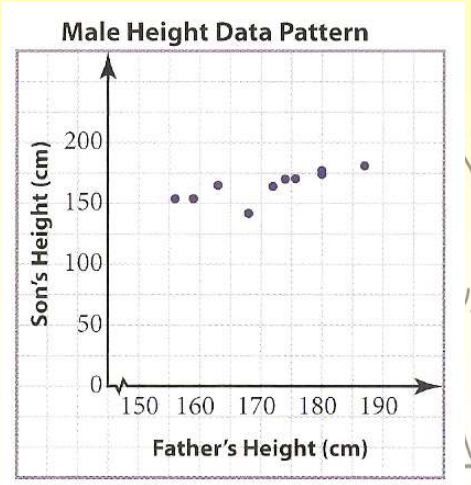


For **two-variable** data sets, you know <u>two</u> attributes about each subject (ie. Height and Age)

→ Can be identified by **ordered pairs** and **two-column tables of values**

→ Can be graphed using a **scatter plot**

→ Some two-variable data sets have a **relationship** between the variables



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CHAPTER 3.1 TWO-VARIABLE DATA SETS

EXAMPLE 1 *Part-Time Job Survey*

A survey of Grade 12 students included a question asking whether they had part-time jobs. The shows a tally of the results by home form.

(a) Identify the variable(s)

There is only <u>one</u> variable
→ Home form

(b) Complete the given table by showing the **frequency** of each home form

HOME FORM	TALLY	FREQUENCY
12A	𝍸	4
12B	𝍸 |	6
12C	||	2
12D	𝍸 |||	8
12E	𝍸 ||	7
12F	𝍸 |	6
12G	|||	3
12H	𝍸	5

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CHAPTER 3.1 TWO-VARIABLE DATA SETS

EXAMPLE 1 *Part-Time Job Survey*

A survey of Grade 12 students included a question asking whether they had part-time jobs. The shows a tally of the results by home form.

(c) Why would constructing a **bar graph** or **dot plot** be the most appropriate way to display this data?

There is only <u>one</u> variable being dealt with (Home Form)

Bar graphs are commonly used to display frequency

HOME FORM	TALLY	FREQUENCY
12A	𝍸	4
12B	𝍸 |	6
12C	||	2
12D	𝍸 |||	8
12E	𝍸 ||	7
12F	𝍸 |	6
12G	|||	3
12H	𝍸	5

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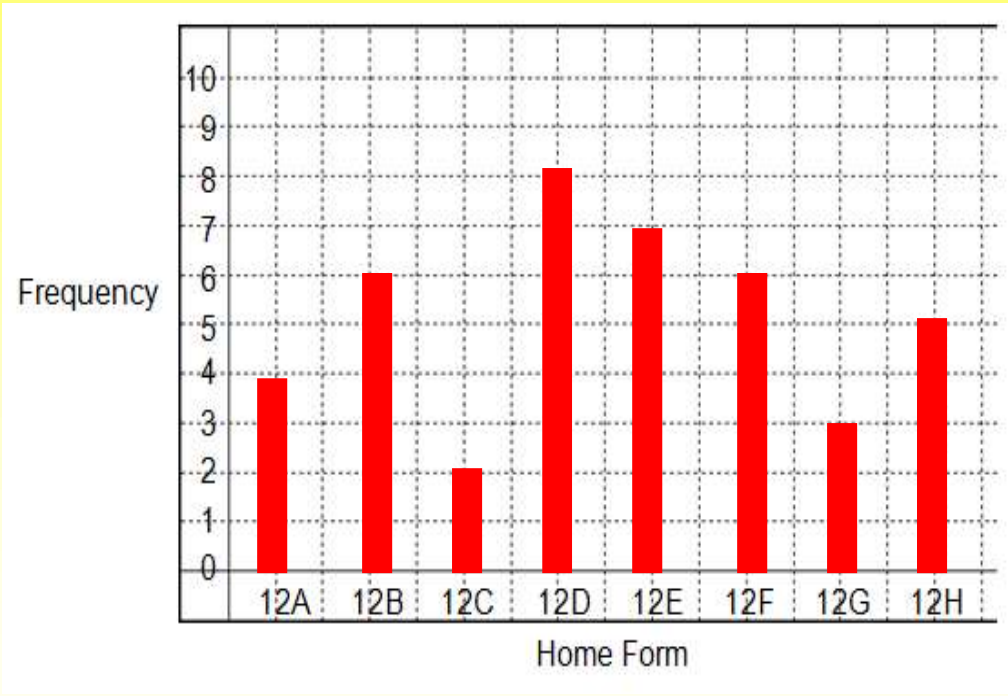
CHAPTER 3.1 TWO-VARIABLE DATA SETS

EXAMPLE 1 *Part-Time Job Survey*

(d) Using the grid below, construct a **bar graph**



HOME FORM	TALLY	FREQUENCY
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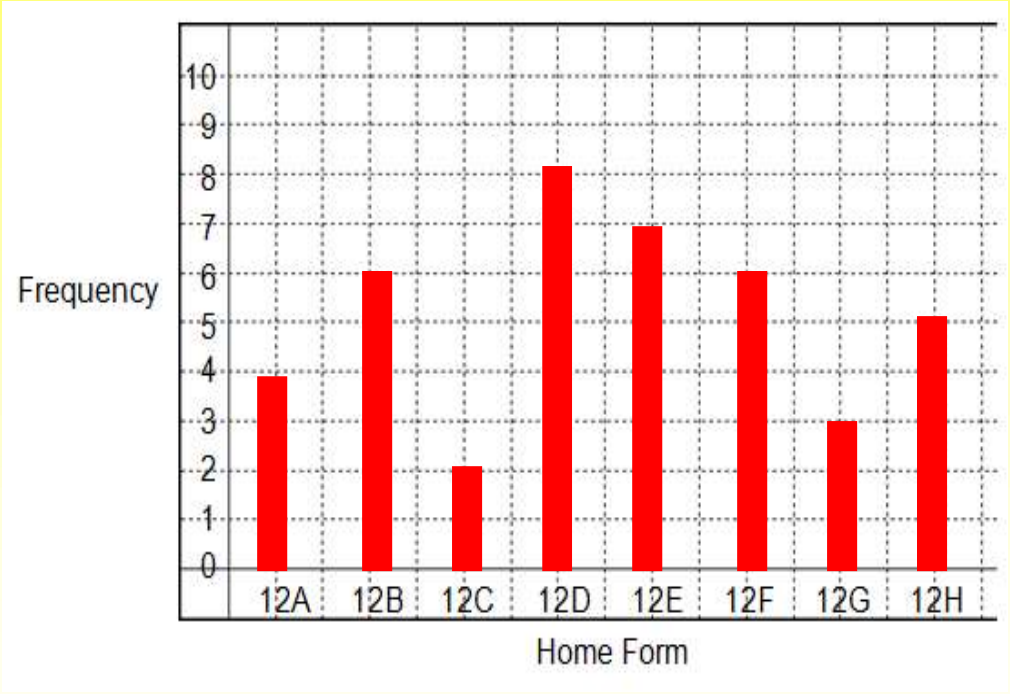
CHAPTER 3.1 TWO-VARIABLE DATA SETS

EXAMPLE 1 *Part-Time Job Survey*

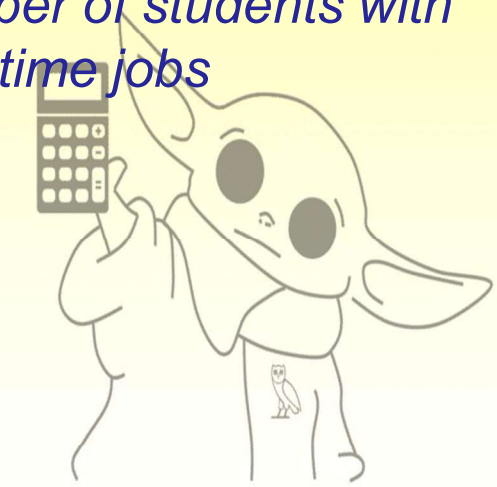
(d) Using the grid below, construct a **bar graph**



(e) Give two descriptive statements about this data set

(i) *Class **12D** has the most students with part-time jobs*

(ii) *Class **12C** has the least number of students with part-time jobs*



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CHAPTER 3.1 TWO-VARIABLE DATA SETS

EXAMPLE 2 *Physical Activity*

The table shows the results of a survey of 15 teenagers, in which participants indicated their age and number of hours of physical activity per week.

Age (years)	14	16	17	15	18	19	19	18	13	15	16	16	16	14	17
Physical Activity (hours)	3	0	4	10	1	6	5	9	10	0	0	14	10	7	0

(a) Identify the variable(s)

- Age (in years)
- Amount of physical activity (in hours)

(b) Explain why a **scatterplot** would be the most appropriate way to display this data

We are dealing with <u>two</u> variables

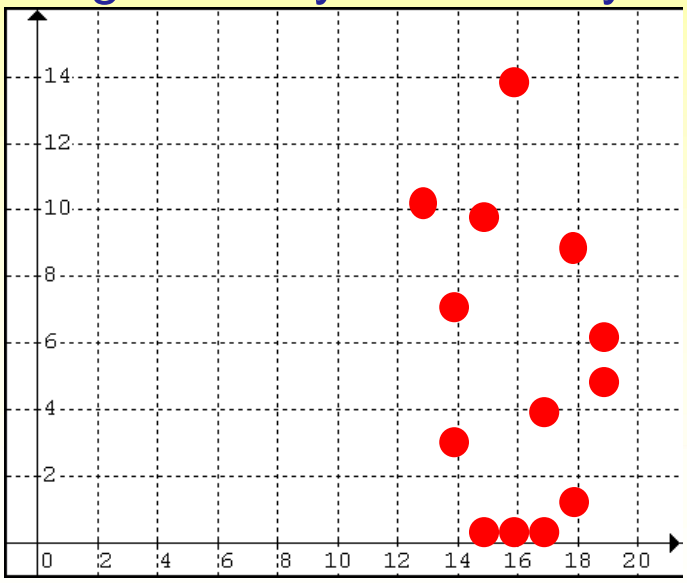
CHAPTER 3.1 TWO-VARIABLE DATA SETS

EXAMPLE 2 *Physical Activity*

(c) Create a **scatterplot** for this data

Age (years)	14	16	17	15	18	19	19	18	13	15	16	16	16	14	17
Physical Activity (hours)	3	0	4	10	1	6	5	9	10	0	0	14	10	7	0

Age vs. Physical Activity



CHAPTER 3.1 TWO-VARIABLE DATA SETS

EXAMPLE 2 *Physical Activity*

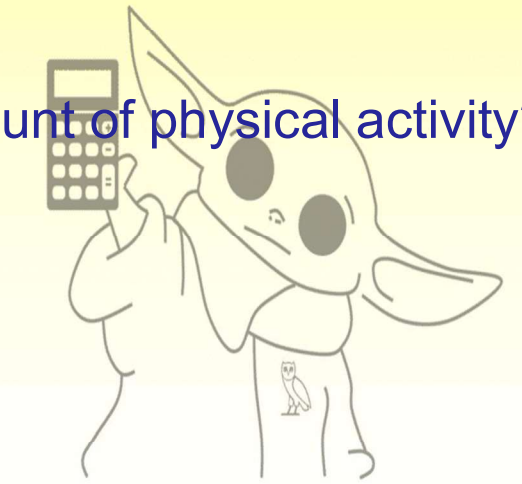
(d) Pose a question that would:

(i) Require **one-variable** analysis

- What is the average age of the students?
- What is the average number of hours of physical activity?

(ii) Require **two-variable** analysis

Is there a relationship between age and amount of physical activity?



CHAPTER 3.1 TWO-VARIABLE DATA SETS

HOMEWORK / SEATWORK

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