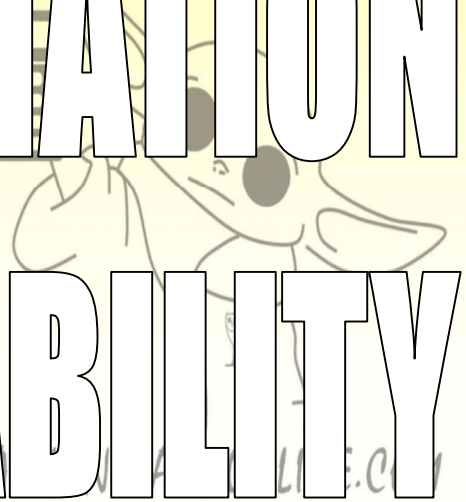
ST. JEAN DE BREBEUF

MATHEMATICS

CHAPTER 2.4

INTERPRET INFORMATION INVOLVING PROBABILITY



CHAPTER 2.4 INTERPRET INFORMATION INVOLVING PROBABILITY

KEY CONCEPTS

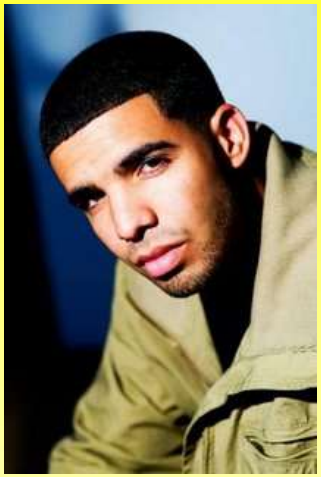
Probability and **statistics** are presented through the *media* in a variety of contexts.

Statistics (collection and analysis of numerical information) are collected from real-life events or studies.
→The information gather is called **data**

Statistics, like probability, help predict the result of future events.

CHAPTER 2.4 INTERPRET INFORMATION INVOLVING PROBABILITY

EXAMPLE *Musical Preferences*



A local radio station surveyed 100 students from one high school to determine their favourite music.

The data is presented below.

MUSIC	PERCENT OF STUDENTS	FRACTION	DECIMAL
Rock	45	$\frac{45}{100}=\frac{9}{20}$	0.45
Rap	35	$\frac{35}{100}=\frac{7}{20}$	0.35
Country	20	$\frac{20}{100}=\frac{1}{5}$	0.20

(a) Complete the table above by expressing each percent as a fraction in <u>lowest terms</u> and as a decimal (first one is done for you)

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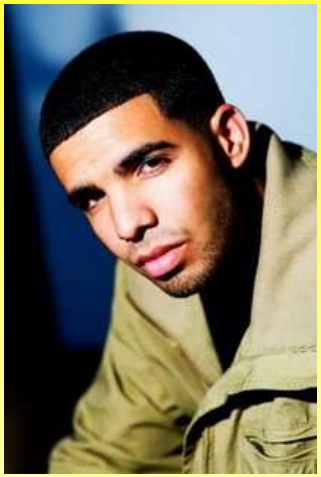
CHAPTER 2.4 INTERPRET INFORMATION INVOLVING PROBABILITY

EXAMPLE *Musical Preferences*



MUSIC	PERCENT OF STUDENTS	FRACTION	DECIMAL
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Country	20	$\frac{20}{100} = \frac{1}{5}$	0.20

(b) If there are **5000 students**, how many of them would you expect to like

Multiply the # of students by the *decimal*

(i) Rock

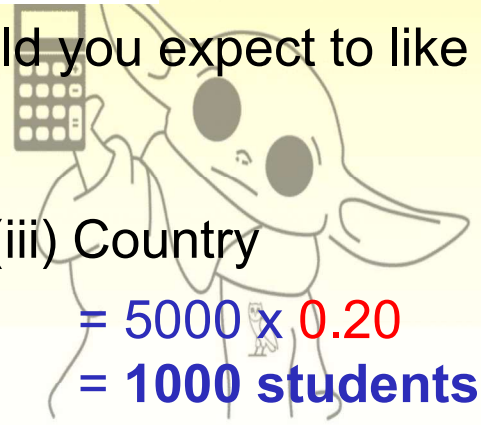
= 5000 x 0.45
= **2250 students**

(ii) Rap

= 5000 x 0.35
= **1750 students**

(iii) Country

= 5000 x 0.20
= **1000 students**



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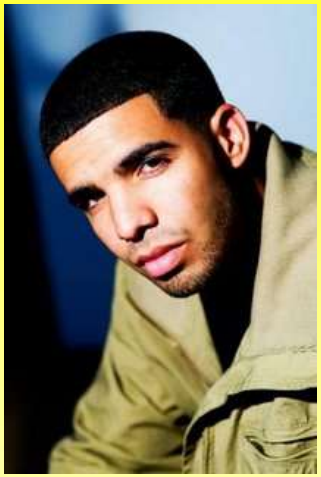
EXAMPLE *Musical Preferences*



(c) List several factors which could possibly make the data inaccurate

→ Not all genres of music were listed or mentioned

→ Does not tell us how the students were selected for the survey

→ ...

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EXAMPLE 2 *Football*

(Page 90 #2)

A football quarterback has completed **125** passes in **200** attempts so far this season.

a) What **percent** of his passes has he completed?

$$Percent = \frac{\#\,of\ successful\ passes}{Total\ \#\,of\ attempts} \times 100$$

$$Percent = \frac{125}{200} \times 100$$

$$Percent = 0.625 \times 100$$

$$\boxed{Percent = 62.5\%}$$

62.5% of the passes are completed successfully

b) If he attempts **30 passes** in the next game, how many would you expect him to complete?

*Use the **percentage** and multiply it to the # of passes*

$$Completed\ passes = 30 \times 62.5\%$$

$$Completed\ passes = 30 \times \frac{62.5}{100}$$

$$Completed\ passes = 30 \times 0.625$$

$$\boxed{Completed\ passes = 18.75}$$

Out of 30 attempts, **18 completed passes** are expected

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EXAMPLE 2 *Football*
(Page 90 #2)

A football quarterback has completed **125** passes in **200** attempts so far this season.

c) Suggest some factors that might affect your estimate.

→ 30 attempts is significantly lower than 200 attempts
→ Predicted estimate could be lower than what is calculated

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Homework

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