Before we begin, are there any questions from last day's work?

pp. 82-85 #1 - 6, 11, 13, 14

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) convert probability fractions to a percent.
b) use probability to make predictions.

MBF 3CI

Date: Mar. 1/17

2.4 Interpreting Information Involving Probability and Statistics

Ex: At HHSS, 500 students were surveyed, at random, to determine which form of exercise they enjoy best. The statistical summary is:

Form of Exercise	Percent of Students
Running	30%
Weightlifting	25%
Cycling	10%
Other	35%

a) i) What is the experimental probability that they prefer running? Express as a percent, decimal and fraction.

P(running) = 30%
= 0.30
= $\frac{3}{10}$

ii) What ***number*** of students prefer running?

30% of 500
= 0.3 × 500
= 150

∴ **150** students prefer running.

b) There are 300 **more** students to be surveyed.

i) How many do you predict will like running the best from this **new group** of students?

30% of 300
= 0.3 × 300
= 90

∴ 90 students from the **new group** are predicted to prefer running.

ii) How many do you expect out of the **300 students** will like weightlifting or cycling the best?

P(weight lifting or cycling) = (25% + 10%) of 300
= 35% × 300
= 0.35 × 300
= 105

∴ 105 students ***should*** prefer weight lifting or cycling.

c) Why do you need to be careful about the predictions made in b)?

STOP The second 300 students were never actually surveyed.
We are **assuming** the percentages are the same as the irst 500.

SEATWORK: pp. 89-90 #1, 2, 3 (and Numeracy Practice below)

NUMERACY PRACTICE (also homework)

Check some homework?

Convert each experimental probability to a **percentage**:

a) $\frac{1}{4}$ of the class does not like pizza — Answer: 25%

$= 0.25$

b) 16 "Tails" in 20 coin flip trials — Answer: 80%

$\frac{16}{20} = 0.8$

c) 1 out of 1 million — Answer: 0.000 1 %

$\frac{1}{1\,000\,000} \times 100\% = 0.000\,001$

d) $\frac{65}{100}$ — Answer: _____

e) 40 winning tickets out of 285 951 200 tickets — Answer: 0.000 013 988 %

$\frac{40}{285\,951\,200} \times 100\%$

f) 51 winning tickets out of 146 936 000 tickets — Answer: _____

g) 1 winning ticket out of 13 983 816 tickets — Answer: _____

e) $= 1.3988 \times 10^{-7}$

$= 0.0000001398$

0.00001398%

$= 0.000\,013\,98\%$