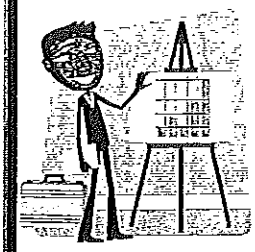
HOMEWORK

#60



Experimental Probability

Objective: to be able to calculate experimental probability and use it to calculate expected results

Starter questions

A With a fair dice, what is the probability of rolling:

1. a 1
2. a 2
3. an odd number
4. a number bigger than 4
5. not the number 5
6. a 4 or 3

B **Below are the probabilities of an event happening, write down the probability of that event NOT happening.**

1. **1 out 6**
2. **11 out 30**
3. **0.2**
4. **25%**
5. **0.99**

C Work out:

1. 0.2 x 8
2. 0.3 x 5
3. 0.5 x 12
4. 0.11 x 4
5. 0.25 x 16

Main questions

1. Simon records the color of cars going past his house for an hour

Colour	Frequency
Blue	5
Red	4
Yellow	1
White	7
Black	3

   a. What is the probability the next car will be i) blue ii) red iii) Not black
   b. How many Red cars would you expect if i) 100 cars went past ii) 60 cars went past iii) 120 cars went past

2. Sammy throws a drawing pin 200 times and records how it lands

Pin up	160
Pin down	40

   a. What is the probability the pin will land i) pin up? ii) pin down
   b. How many pin ups would you expect if the pin was thrown i) 80 times ii)320 times iii) 400 times iv)1000 times

3. A group of children are asked to write for their favourite food, and child is picked at random

Favourite Food	Number of people
Chinese	20
Pizza	16
Mexican	18

   a. What is the probability the person i) liked Chinese? ii) Didn't like Mexican best.
   b. How many people would you expect to like pizza if i) 100 people were asked ii) 250 people were asked iv) 1000 people were asked?

Star question

I want to know the probability of selecting a four letter word from the dictionary (or any other book) if I choose a word from random.

a) Design and carry out an experiment to find the probability of finding a four letter word.
b) How many for letter words would I expect to select if I picked 100 words.
c) How can I make the experiment as accurate as possible?