Probability

Write the numbers from 1 to 4 on a piece of paper, like this:

Then ask someone to circle one of the numbers. From a
statistical study where this experiment was done many, many
times, a mathematical theory of probability resulted: four out of five people will circle the
number 3. Do you think this would be true if you carried out the experiment? Try it and find out.

In case your experimental subjects want to know what you're doing, tell them this:

I'm doing a statistical experiment to test a theory of probability.

This answer may satisfy some, but others might want additional information. Here's some more
of the mathematical scoop about this kind of experiment.

Collecting statistics is a way to get a picture of a particular situation, a kind of numerical picture.
It can be useful for predicting what is likely to happen in a situation where you don't have all the
statistics. If you ask people to circle one of the numbers in the 1-2-3-4 experiment, chances are
pretty good that most of them will circle the number 3; the probability is four out of five, or 4/5
as mathematicians would write it.

The "four-out-of-five" information doesn't promise that if you try the experiment on five people,
four of them will circle the 3 and the other will circle one of the other numbers. Probability
doesn't work like that. Probability theory *does* promise that if you do this experiment many times
with different groups of people, the more times you try the experiment, the closer the results will
come to the 4/5 probability. That's what the odds favor.

We ran this experiment on 3 Dec 99 with the thirty-six students in the Sunny Hills Math Club,
and measured these statistics:

- 1   person chose "1" or 2.8%
- 6   people chose "2" or 17%
- 21 people chose "3" or 58%
- 8   people chose "4" or 22%

We ran this experiment again on 30 Nov 2000:
- 5   people chose "1" or 8.3%
- 9   people chose "2" or 25%
- 12 people chose "3" or 33%
- 10 people chose "4" or 28%

Source: "Math For Smarty Pants" by Marilyn Burns, Scholastic Inc 1982, ISBN 0-590-48940-2

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4

Circle one:

1   2   3   4