

Refine Ideas About Probability

Apply It

► Complete problems 1–5.

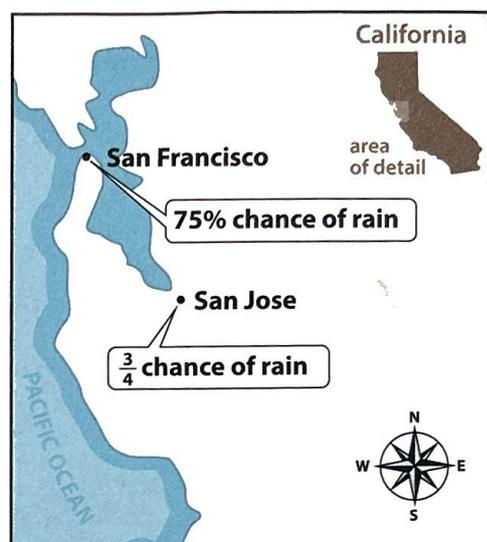
1 Translate Describe each probability in words.

- a. $\frac{3}{4}$ likely b. $\frac{7}{8}$ very likely c. $\frac{1}{3}$ unlikely
 d. $\frac{11}{20}$ almost as likely as not e. $\frac{1}{20}$ very unlikely

2 Compare There is a 75% chance of rain in San Francisco.

There is a $\frac{3}{4}$ chance of rain in San Jose. Is it more likely to rain in San Francisco than in San Jose? Explain.

It is not more likely to rain in S.F. 75% is equivalent to $\frac{3}{4}$. It is as likely to rain in SF as it is in San Jose.



3 Analyze A bag contains 12 marbles. The probability of selecting a green,

a yellow, or a blue marble from the bag is 1. The probability of selecting a

yellow marble is $\frac{1}{2}$. Selecting a blue marble is more likely than selecting a green

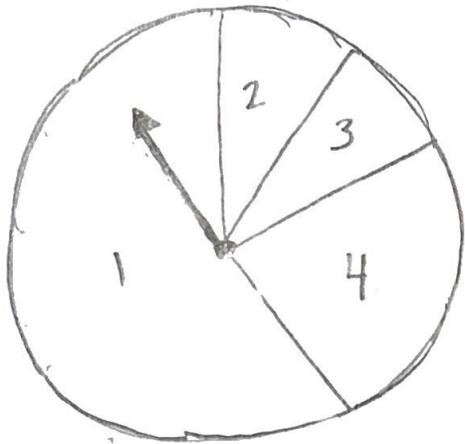
marble. Mitena says the greatest possible number of green marbles in the bag is 2.

Elian says the least possible number of green marbles is 0. Who is correct? Explain.

Both Mitena and Elian could be correct. The probability of a yellow marble is $\frac{1}{2}$, so 6 of the 12 marbles are yellow. The rest are green or blue. Since selecting a blue marble is more likely than a green marble, there can be 6 blue, 0 green or 5 blue, 1 green or 4 blue, 2 green. So there are 0, 1, or 2 green marbles.

4 PART A Draw a spinner with the following characteristics:

- The spinner is certain to land on 1, 2, 3, or 4.
- The spinner is more likely to land on 1 than not land on 1.
- The spinner is equally likely to land on 2 or 3.
- The spinner is twice as likely to land on 4 as on 2.



PART B Identify fractions that could describe the probability of landing on each number on your spinner. Justify your answers.

$$\begin{array}{l}
 2 \text{ \& } 3 : \frac{1}{10} \\
 4 : \frac{2}{10} \text{ or } \frac{1}{5} \\
 1 : \frac{4}{10}
 \end{array}$$

Two & three are equal. Four has to be twice as big and one has to be greater than the sum of 2, 3 + 4.

5 Math Journal A bag has 6 pink marbles, 4 purple marbles, and 2 orange marbles. You select a marble from the bag at random. Describe the likelihood of two events.

Selecting a pink marble is equally likely as not
 selecting a purple marble is unlikely