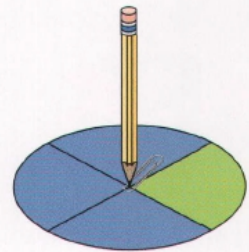


Solutions

Nov 20-18:35

1. Mary says, "The probability of spinning green is $\frac{1}{4}$." Madison says, "The probability is 25%." Who is right? Explain.
2. Raymond tossed a coin to decide who should go first in a soccer match. Does each team have an *equally likely* chance of winning the coin toss? Explain.



- ① Both correct!
Reason: $\frac{1}{4}$ and 25% are different ways to represent the same value.
- ② Yes. There are two outcomes on a coin, each of which is equally likely.

Jan 8-13:17

3. In each situation, find the total number of outcomes and the number of favourable outcomes.

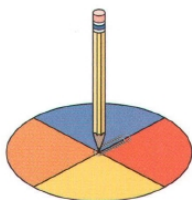
a) tossing heads on a nickel



b) rolling a 5 on a number cube



c) spinning blue on the spinner



a) 2 outcomes
1 favourable

b) 6 outcomes
1 favourable

c) 4 outcomes
1 favourable

4. For each part in question 3, find the probability as a fraction.

a) $P(\text{head}) = \frac{1}{2}$

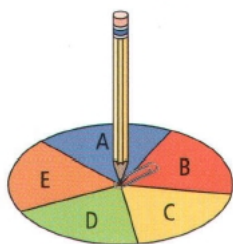
b) $P(5) = \frac{1}{6}$

c) $P(\text{Blue}) = \frac{1}{4}$

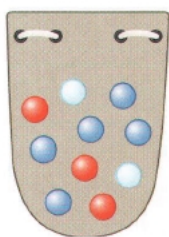
Jan 8-13:25

5. In each situation, find the total number of outcomes and the number of favourable outcomes.

a) spinning an A or a C on the spinner



b) choosing a white marble from the bag



a) 5 outcomes
2 favourable

b) 10 outcomes
2 favourable

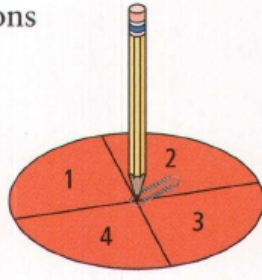
6. For each part in question 5, find the probability as a fraction.

a) $P(\text{A or C}) = \frac{2}{5}$

b) $P(\text{white}) = \frac{2}{10} \left(= \frac{1}{5} \right)$

Jan 8-13:28

7. A spinner has four sections numbered 1 to 4.



- a) How many possible outcomes are there?
- b) How many favourable outcomes are there for each number?
- c) What is the probability of spinning a 4?
- d) In 100 spins, how many times would you expect the spinner to land on 4?

a) 4 outcomes

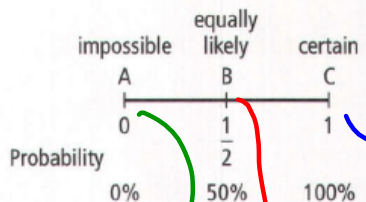
b) 1 favourable for each #

c) $P(4) = \frac{1}{4}$

d) $P(4) \times 100 = \frac{1}{4} \times 100 = 25 \text{ times}$

Jan 8-13:29

8. Match the probability of each situation with a letter on the number line.



- a) the sun rising tomorrow
- b) a coin landing tails up
- c) February having 30 days

a

b

c

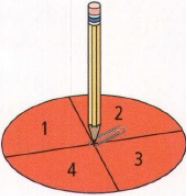
Jan 8-13:29

9. Find each probability as a fraction and as a percent.

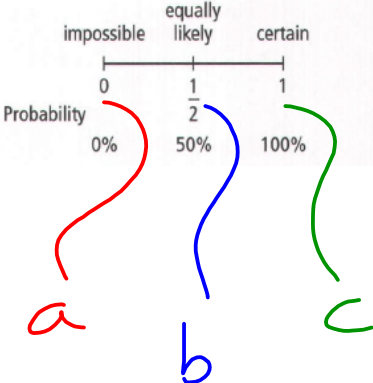
a) What is the probability of spinning a 5?

b) What is the probability of spinning an even number?

c) What is the probability of spinning *any* number from 1 to 4?



10. Use the number line to determine how likely each part of question 9 is.



a) $P(5) = 0$
There is no 5.

b) $P(\text{even}) = \frac{2}{4}$
 $= \frac{1}{2}$
 $= 50\%$

c) $P(\# \text{ from } 1 \rightarrow 4)$
 $= 1 \text{ or } 100\%$

Jan 8-13:30

11. To introduce probability to his class, Mr. Ogg wrote each letter of the word PROBABILITY on a separate card and placed the cards face down.
- a) What is the probability of choosing the letter B?
- b) What is the probability of choosing a consonant?
- c) What is the probability of choosing a vowel?
- d) Explain why the probability is different for different letters.

d) We differ in numbers of each letter which will affect the number of favourable outcomes

11 letters (outcomes)

$$a) P(B) = \frac{2}{11}$$

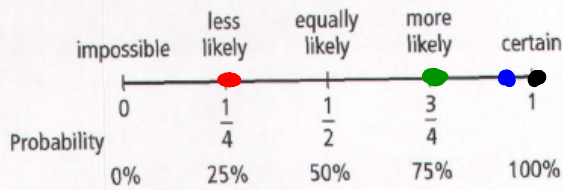
$$b) P(\text{consonant})$$

$$= \frac{7}{11}$$

$$c) P(\text{vowel}) = \frac{4}{11}$$

Jan 8-13:31

12. Candice challenged Melanie to determine the probability of a list of situations on a scale from 0 to 1. Locate each probability on the number line. Justify your reasoning.



a) an ice cream cone melting on a summer day

b) rain on December 1st

c) snow on December 31st

d) a coin sinking in a pond

c) Likely to happen but not certain

d) Metal coins don't float.

a) Depends upon how hot the day is and whether it gets eaten quickly.

b) Could rain, but it might snow.

Jan 8-13:32

13. a) List two situations that are *impossible* (probability of 0, 0%).
 b) List two situations that are *equally likely* to happen (probability of $\frac{1}{2}$, 50%).
 c) List two situations that are *certain* to happen (probability of 1, 100%).

a) February having 30 days.
The class being silent for the whole lesson.

b) Flipping a head on a fair coin.
Rolling an odd number on a fair die.

c) January having 31 days.
Mr. White being happy at 2:15 pm

Jan 8-13:33

14. Consider a number cube.

- a) What is the probability of rolling an odd number?
 b) What is the probability of rolling a 7?
 c) What is the probability of rolling *any* number from 1 to 6?



a) 3 odd #'s (1, 3, 5)
 6 outcomes

$$P(\text{odd}) = \frac{3}{6} \quad (= \frac{1}{2})$$

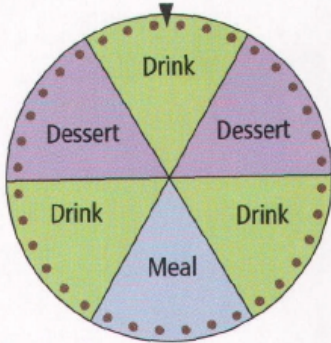
b) zero 7s $\Rightarrow P(7) = 0$

c) $P(\# \text{ from } 1 \rightarrow 6) = 1$

Jan 8-13:33



15. Consider the birthday prize spinner of free items.



- a) Do you have an equal chance of winning each prize? Explain.
 b) Describe a situation that is *certain* to happen.
 c) Describe a situation that is *impossible*.
 d) Describe two situations that are *equally likely* to happen.

a) No. The number of chances to win each prize is different.

b) You will win a prize.

c) To win a car.

d) To win a drink.
 To win a meal or a dessert.

Jan 8-13:33