

Aim: What is probability?

Do Now: Frank tosses a coin in the air. What is the probability that the coin lands heads up?

1. What is probability?

Probability of Event = _____

2. A fair coin is thrown in the air four times. If the coin lands with the head up on the first three tosses, what is the probability that the coin will land with the head up on the fourth toss?

3. A box contains six black balls and four white balls. What is the probability of selecting a black ball at random from the box?

4. Mary chooses an integer at random from 1 to 6. What is the probability that the integer she chooses is a prime number?

5. Which inequality represents the probability, x , of any event happening?
(1) $x \geq 0$ (3) $0 < x < 1$
(2) $x < 1$ (4) $0 \leq x \leq 1$

6. If the probability that it will rain on Thursday is $\frac{5}{6}$, what is the probability that it will *not* rain on Thursday?

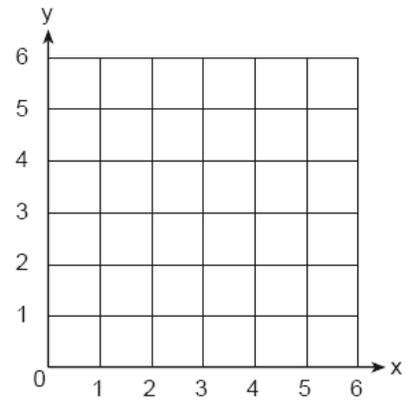
7. The faces of a cube are numbered from 1 to 6. What is the probability of *not* rolling a 5 on a single toss of this cube?

8. Students in Ms. Nazeer's mathematics class tossed a six-sided number cube whose faces are numbered 1 to 6. The results are recorded in the table to the right. Based on these data, what is the empirical probability of tossing a 4?

Result	Frequency
1	3
2	6
3	4
4	6
5	4
6	7

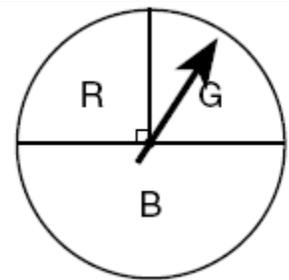
9. A bag contains eight green marbles, five white marbles, and two red marbles. What is the probability of drawing a red marble from the bag?

10. A square dartboard is represented in the accompanying diagram. The entire dartboard is the first quadrant from $x = 0$ to 6 and from $y = 0$ to 6. A triangular region on the dartboard is enclosed by the graphs of the equations $y = 2$, $x = 6$, and $y = x$. Find the probability that a dart that randomly hits the dartboard will land in the triangular region formed by the three lines.

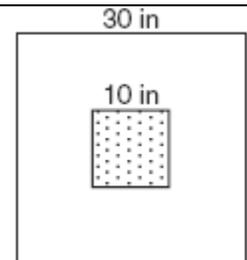


11. At a school fair, the spinner represented in the accompanying diagram is spun.

- a) What is the probability that it will land in section G ?
- b) What is the probability that it will land in section B ?



12. The accompanying diagram shows a square dartboard. The side of the dartboard measures 30 inches. The square shaded region at the center has a side that measures 10 inches. If darts thrown at the board are equally likely to land anywhere on the board, what is the theoretical probability that a dart does *not* land in the shaded region?



13. The party registration of the voters in Jonesville is shown in the table to the right. If one of the registered Jonesville voters is selected at random, what is the probability that the person selected is *not* a Democrat?

- (1) 0.333 (2) 0.400 (3) 0.600 (4) 0.667

Registered Voters in Jonesville	
Party Registration	Number of Voters Registered
Democrat	6,000
Republican	5,300
Independent	3,700