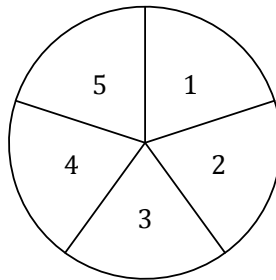# Basic Concepts
Contemporary Math (MAT-130)

For the spinner shown, give the a) probability, b) odds in favor and c) odds against for each event.

1. The spinner lands on the number 4.
2. The spinner lands on a number less than 3.
3. The spinner lands on an even number.
4. The spinner lands on an odd number.
5. The spinner lands on a number greater than 1.

Solve each probability problem.

6. What is the probability of getting two heads if a coin is flipped twice?
7. What is the probability of getting two heads if a coin is flipped three times?
8. A jar has 3 red jelly beans, 2 green jelly beans and 5 yellow jelly beans. What is the probability of picking a red jelly bean?
9. If two fair dice are rolled what is the probability of rolling doubles?
10. If two fair dice are rolled what is the probability of the two dice having a sum of five?
11. If the odds against an event are 3 to 7 what is the probability of the event?
12. If a couple has four children what is the probability that the eldest child is a boy?
13. In a shipment of 1000 digital cameras 42 are defective. What is the probability of randomly selecting a defective digital camera?
14. A hallway has nine doors in it. Behind two of the doors are bathrooms. What is the probability that you will find a bathroom if you open 1 door at random?
15. The spinner shown above is spun twice to determine a two digit number (ie. spinning a 1 and a 2 would generate the number 12). What is the probability that the number is a multiple of 3?
16. What is a probability of getting a perfect score on a five question true or false test?
17. If a class consists of 13 boys and 15 girls what is the probability of randomly selecting a female student?
18. What is the probability of selecting a king from a standard deck of cards?
19. Sally has 5 t-shirts, 3 sweaters, and 7 dresses in her closet. If she picks an article of clothing to wear at random what is the probability that it is a sweater?
20. A combination lock consists of 3 non-repeating digits 0-9 what is the probability of randomly selecting the correct combination?
21. What is the probability of selecting a club from a standard deck of cards?

Solutions:

1. $a) \frac{1}{5}$ $b)$ 1 to 4 $c)$ 4 to 1
2. $a) \frac{2}{5}$ $b)$ 2 to 3 $c)$ 3 to 2
3. $a) \frac{2}{5}$ $b)$ 2 to 3 $c)$ 3 to 2
4. $a) \frac{3}{5}$ $b)$ 3 to 2 $c)$ 2 to 3
5. $a) \frac{4}{5}$ $b)$ 4 to 1 $c)$ 1 to 4
6. $\frac{1}{4}$
7. $\frac{3}{8}$
8. $\frac{3}{10}$
9. $\frac{1}{6}$
10. $\frac{1}{9}$
11. $\frac{7}{10}$
12. $\frac{1}{2}$
13. $\frac{21}{500}$
14. $\frac{2}{9}$
15. $\frac{9}{25}$
16. $\frac{1}{32}$
17. $\frac{15}{28}$
18. $\frac{1}{13}$
19. $\frac{1}{5}$
20. $\frac{1}{720}$
21. $\frac{1}{4}$