

1) A spinner is divided into 8 sections of equal size. The sections are numbered 1 through 8.

Use this information to determine the probability of the needle landing on:

- a. section 7 $\frac{1}{8}$
 b. an even numbered section $\frac{1}{2}$
 c. section 1, 2, 3, or 4 $\frac{1}{2}$
 d. section 9 0
 e. section 8 $\frac{1}{8}$

2) A spinner contains 8 equally divided sections, two sections have the letter A, 3 sections have the letter B, one section has the letter C, one section has the letter D, and one section has the letter E. What is the probability of:

- a. spinning an A $\frac{1}{4}$
 b. spinning a B $\frac{3}{8}$
 c. spinning a C $\frac{1}{8}$
 d. spinning a D $\frac{1}{8}$
 e. spinning an E $\frac{1}{8}$

3) A factory produces 1000 light bulbs per minute. Each minute, one bulb produced will be defective. What is the probability of selecting the defective bulb from the light bulbs produced in one minute? What is the probability of selecting a defective bulb from the light bulbs produced in one hour?

1 hr = 60,000 bulbs
 60 defective $\frac{60}{60,000} \rightarrow \frac{1}{1,000} \rightarrow .001 \rightarrow .1\%$

$\frac{1}{1,000}$ or .001 or .1%

4) Every 100th box of candy contains a prize. What is the probability for selecting the box of candy with a prize? A case contains 1000 boxes and how many prizes? What is the probability of selecting a box containing a prize from a case?

Prize $\frac{1}{100}$ or .01 or 1%

Case = 1000 boxes
 = 10 prizes

$\frac{10}{1000}$ or 1%

5) You dropped two coins. What is the probability that they will both land on heads?

$\frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$ or .25 or 25%

6) A lottery machine generates numbers randomly. Three numbers are picked between 1 and

20. What is the probability that all three numbers that are picked are 17 (each number picked comes from a different set of numbers)?

$\frac{1}{20} \cdot \frac{1}{20} \cdot \frac{1}{20} = \frac{1}{8000}$ or .000125 or .0125%

7) There are 4 blue marbles and 2 red marbles. A marble is selected and not returned. What is the probability that two red marbles will be chosen?

$$\text{Total} = 6 \quad \frac{2}{6} \cdot \frac{1}{5} = \frac{2}{30} = \frac{1}{15} \approx .067 \approx 6.7\%$$

8) You are given a pair of dice. One die is numbered 1 through 6 but the other die is numbered 7 through 12. What is the probability of rolling a 3 and an 8?

$$\frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36} \approx .028 \approx 2.8\%$$

9) A machine generates numbers randomly from balls numbered 5 through 15. Two numbers are selected. Without replacing the first ball drawn, what is the probability of drawing an 11 and an 8?

11 Balls

$$\frac{1}{11} \cdot \frac{1}{10} = \frac{1}{110} \approx .0091 \approx .91\%$$

10) A bag with 6 blue marbles, 3 green marbles, and 4 orange marbles is lying on a table. What is the probability that John will pick 2 green marbles? (without replacing the marble picked first)

Total = 13

$$\frac{3}{13} \cdot \frac{2}{12} = \frac{6}{156} = \frac{1}{26} \approx .0385 \approx 3.85\%$$

11) A deck of cards has 13 cards each, of 4 suits: hearts, diamonds, clubs, and spades. What is the probability that the first three cards drawn from a full deck of cards are clubs? (without replacement)

$$\frac{13}{52} \cdot \frac{12}{51} \cdot \frac{11}{50} = \frac{1716}{132600} \approx .013 \approx 1.3\%$$

12) There are 6 male puppies and 3 female puppies. What is the probability that the first two puppies chosen will be males? (without replacement)

Total = 9

$$\frac{6}{9} \cdot \frac{5}{8} = \frac{30}{72} \approx .417 \approx 41.7\%$$