

## 8.3 - Mutually Exclusive &amp; Overlapping

**Determine if the scenario involves mutually exclusive or overlapping events. Then find the probability.**

- 1) A box contains six red playing cards numbered one to six. The box also contains six black playing cards numbered one to six. You randomly pick a playing card. It is red or has an even number.
- 2) A basket contains six apples and four peaches. Two of the apples and three of the peaches are rotten. You randomly pick a piece of fruit. It is fresh or it is an apple.
- 3) A litter of kittens consists of two gray females, one gray male, two black females, and two black males. You randomly pick one kitten. The kitten is black or male.
- 4) A bag contains six yellow tickets numbered one to six. The bag also contains three green tickets numbered one to three. You randomly pick a ticket. It is green or has an even number.
- 5) A magazine contains twelve pages. You open to a random page. The page number is two or six.
- 6) A basket contains five apples, four peaches, and three pears. You randomly select a piece of fruit. It is an apple or a peach.
- 7) A litter of kittens consists of three gray kittens, two black kittens, and three mixed-color kittens. You randomly pick one kitten. The kitten is gray or mixed-color.
- 8) A litter of kittens consists of three gray kittens, two black kittens, and two mixed-color kittens. You randomly pick one kitten. The kitten is gray or mixed-color.

- 9) A box of chocolates contains seven milk chocolates and seven dark chocolates. One of the milk chocolates and one of the dark chocolates have peanuts inside. You randomly select and eat a chocolate. It is a milk chocolate or has peanuts inside.
- 10) There are four nickels, five dimes, and three quarters in your pocket. You randomly pick a coin. It is a nickel or a dime.
- 11) A litter of kittens consists of three gray kittens, two black kittens, and three mixed-color kittens. You randomly pick one kitten. The kitten is gray or mixed-color.
- 12) A box contains three red playing cards numbered one to three. The box also contains six black playing cards numbered one to six. You randomly pick a playing card. It is red or has an even number.
- 13) You roll a fair six-sided die. The die shows an even number or a number less than four.
- 14) A magazine contains fifteen pages. You open to a random page. The page number is nine or thirteen.
- 15) A magazine contains fourteen pages. You open to a random page. The page number is four or twelve.
- 16) A litter of kittens consists of three gray females, one gray male, three black females, and one black male. You randomly pick one kitten. The kitten is black or male.
- 17) You roll a fair six-sided die. The die shows a one or a four
- 18) A basket contains six apples and five peaches. Five of the apples and two of the peaches are rotten. You randomly pick a piece of fruit. It is fresh or it is a peach.