

Probability - Independent, Dependent, and Mutually Exclusive

Find the probability.

- 1) You flip a coin and then roll a fair six-sided die. The coin lands heads-up and the die shows an even number.

A) $\frac{1}{4} = 0.25$ B) $\frac{49}{225} \approx 0.218$

C) $\frac{1}{49} \approx 0.02$ D) $\frac{36}{121} \approx 0.298$

- 2) There are five nickels, three dimes, and five quarters in your pocket. You randomly pick three coins and place them on a counter. The first coin is a nickel, the second is a dime, and the third is a quarter.

A) $\frac{5}{182} \approx 0.027$ B) $\frac{25}{572} \approx 0.044$

C) $\frac{1}{4} = 0.25$ D) $\frac{1}{8} = 0.125$

- 3) A box of chocolates contains three milk chocolates, three dark chocolates, and three white chocolates. You randomly select and eat three chocolates. The first piece is milk chocolate, the second is white chocolate, and the third is milk chocolate.

A) $\frac{1}{28} \approx 0.036$ B) $\frac{1}{4} = 0.25$

C) $\frac{125}{1331} \approx 0.094$ D) $\frac{5}{143} \approx 0.035$

- 4) There are seven nickels and seven dimes in your pocket. Three times, you randomly pick a coin out of your pocket, return it to your pocket, and then mix-up the change in your pocket. The first time, the coin is a nickel. The second time, it's a dime. The third time, it's a nickel.

A) $\frac{5}{18} \approx 0.278$ B) $\frac{1}{64} \approx 0.016$

C) $\frac{1}{192} \approx 0.005$ D) $\frac{1}{8} = 0.125$

- 5) A basket contains six apples and four peaches. Three times, you randomly select a piece of fruit, return it to the basket, and then mix the fruit. The first time, you get an apple. Then second and third times, you get peaches.

A) $\frac{1}{8} = 0.125$ B) $\frac{1}{64} \approx 0.016$

C) $\frac{16}{49} \approx 0.327$ D) $\frac{12}{125} = 0.096$

- 6) You flip a coin twice. The first flip lands heads-up and the second flip lands tails-up.

A) $\frac{35}{132} \approx 0.265$ B) $\frac{4}{15} \approx 0.267$

C) $\frac{1}{4} = 0.25$ D) $\frac{3}{110} \approx 0.027$

7) You roll a fair six-sided die. The die shows an even number or a number greater than four.

A) $\frac{2}{3} \approx 0.667$

B) 1

C) $\frac{8}{13} \approx 0.615$

D) $\frac{1}{3} \approx 0.333$

8) A litter of kittens consists of one gray female, three gray males, three black females, and one black male. You randomly pick one kitten. The kitten is gray or male.

A) $\frac{9}{11} \approx 0.818$

B) $\frac{1}{2} = 0.5$

C) $\frac{9}{10} = 0.9$

D) $\frac{5}{8} = 0.625$

9) A litter of kittens consists of two gray females, two gray males, two black females, and one black male. You randomly pick one kitten. The kitten is gray or female.

A) $\frac{6}{7} \approx 0.857$

B) $\frac{5}{7} \approx 0.714$

C) $\frac{7}{8} = 0.875$

D) $\frac{11}{12} \approx 0.917$

10) A jar contains eight balls, numbered from one to eight. You randomly pick a ball. It is numbered one or six.

A) $\frac{4}{5} = 0.8$

B) $\frac{9}{13} \approx 0.692$

C) $\frac{3}{4} = 0.75$

D) $\frac{1}{4} = 0.25$

11) A spinner has an equal chance of landing on each of its seven numbered regions. After spinning, it lands in region three or seven.

A) $\frac{4}{7} \approx 0.571$

B) $\frac{5}{8} = 0.625$

C) $\frac{2}{7} \approx 0.286$

D) $\frac{9}{13} \approx 0.692$

12) A bag contains six yellow tickets numbered one to six. The bag also contains four green tickets numbered one to four. You randomly pick a ticket. It is yellow or has a number less than three.

A) $\frac{1}{2} = 0.5$

B) $\frac{1}{3} \approx 0.333$

C) $\frac{5}{7} \approx 0.714$

D) $\frac{4}{5} = 0.8$