

A football coach has 15 players on the bench.

1. During the game a running back, a wide receiver, and a lineman are hurt. On the bench there are 3 extra running backs, 4 extra wide receivers, and 6 extra linemen. How many ways can the coach pick three bench players to fill these positions?

$$\frac{3}{RB} \cdot \frac{4}{WR} \cdot \frac{6}{L} = 72$$

2. During the game the coach needs to send 2 players to the locker room to refill the water. How many ways can the coach choose two players on the bench to fill the water jug?

$${}^{15}C_2 = 105$$

The probability that I wash the car is $\frac{3}{8}$ and the probability that I listen to music is $\frac{4}{9}$. Find the following probability as a percent to the nearest tenth.

P(wash the car or listen to music) =

$$\frac{3}{8} + \frac{4}{9} - \frac{3}{8} \cdot \frac{4}{9}$$

65.3%

Review answers

$$3(c) \rightarrow 120$$

$$4(b) \frac{100}{906}$$

$$4(c) 1,247,400$$

You want to plant some flowers around your house. You plan to plant some Petunias, some Begonias, and some Geraniums. There are 5 colors of Petunias, 4 colors of Begonias, and 7 colors of Geraniums.

How many ways could you chose the following:

3 colors of Petunias, 2 colors of Begonias, and 4 colors of Geraniums?

$$\frac{{}^5C_3}{} \cdot \frac{{}^4C_2}{} \cdot \frac{{}^7C_4}{} = 2100$$

Petunias Begonias Geraniums

A survey of favorite pets was conducted. A person is selected at random. Find each probability as a fraction.

	Cats	Dogs	Birds	Total
Male	8	14	2	24
Female	15	6	4	25
Total	23	20	6	49

- a) $P(\text{Cat} | \text{Female}) = \frac{15}{25}$ b) $P(\text{Male or Dog}) = \frac{24 + 20 - 14}{49} = \frac{30}{49}$
- c) $P(\text{Bird and Female}) = \frac{4}{49}$ d) $P(\text{Male} | \text{Cat}) = \frac{8}{23}$

You must select a code to lock/unlock your cell phone. This code must contain 2 letter and 3 numbers. Find the number of outcomes for each:

- a) Letter can repeat but numbers can't
 $26 \cdot 26 \cdot 10 \cdot 9 \cdot 8$
- b) Neither letters nor numbers are allowed to repeat
 $26 \cdot 25 \cdot 10 \cdot 9 \cdot 8$

In your drawer you have the following colored paper clips: 5 pink, 3 blue, and 8 green. Find each probability as a fraction.

- a) You randomly grab a paper clip and put it on a stack of papers then you grab another one.

$$P(\text{green and pink}) = \frac{8}{16} \cdot \frac{5}{15} = \frac{40}{240}$$

- b) You randomly grab a paper clip but throw it back because it is bent, then you grab another one.

$$P(\text{blue and blue}) =$$