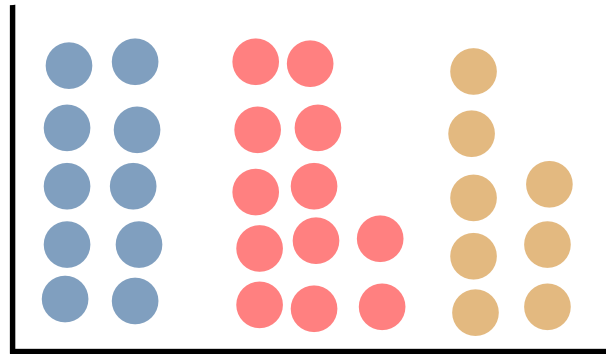


Con reemplazo

"Sacar una bola blanca en la primera extracción y una bola negra en la segunda extracción reemplazando la primera".



10 blancas

12 rojas

8 negras

30 TOTALES

$$\begin{aligned} P(B_1 \cap N_2) &= P(B_1) \cdot P(N_2|B_1) \\ &= \frac{1}{3} \cdot \frac{4}{15} = \boxed{\frac{4}{45}} \end{aligned}$$

LA RESPUESTA ES:

$$\frac{10}{30} \cdot \frac{8}{30}$$

Fórmula = blancas/total · negras/total

Primera extracción

Segunda extracción

$$P(B_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_1) = \frac{12}{30} = \frac{6}{15} = \frac{2}{5}$$

$$P(N_1) = \frac{8}{30} = \frac{4}{15}$$

$$P(B_2|B_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_2|B_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_2|B_1) = \frac{8}{30} = \frac{4}{15}$$

$$P(B_2|R_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_2|R_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_2|R_1) = \frac{8}{30} = \frac{4}{15}$$

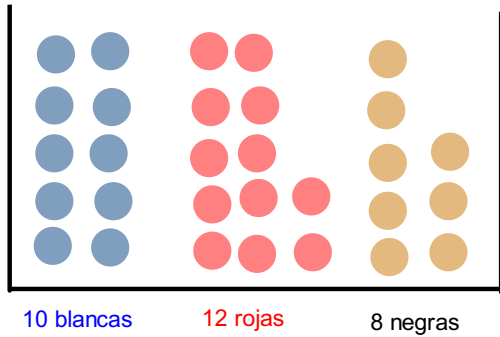
$$P(B_2|N_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_2|N_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_2|N_1) = \frac{8}{30} = \frac{4}{15}$$

Sin reemplazo

"Sacar una bola blanca en la primera extracción y una bola negra en la segunda extracción sin reemplazar la primera".

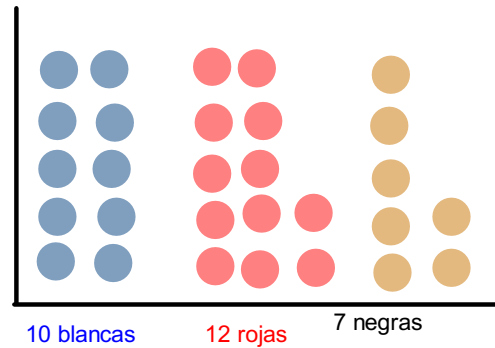
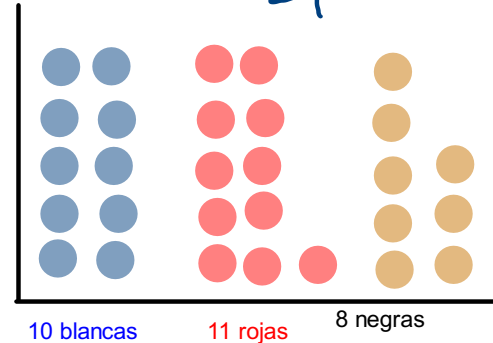
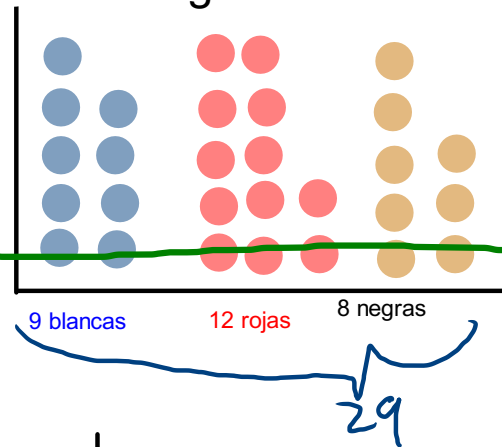


Primera extracción

$$P(B_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_1) = \frac{12}{30} = \frac{6}{15} = \frac{2}{5}$$

Segunda extracción



$$P(B_2|B_1) = \frac{9}{29}$$

$$P(R_2|B_1) = \frac{12}{29}$$

$$P(N_2|B_1) = \frac{8}{29}$$

$$P(B_2|R_1) = \frac{10}{29}$$

$$P(R_2|R_1) = \frac{11}{29}$$

$$P(N_2|R_1) = \frac{8}{29}$$

$$P(B_2|N_1) = \frac{10}{29}$$

$$P(R_2|N_1) = \frac{12}{29}$$

$$P(N_2|N_1) = \frac{7}{29}$$

$$P(B_1 \cap N_2) = P(B_1) \cdot P(N_2|B_1) = P(N_1) = \frac{8}{30} = \frac{4}{15}$$

$$= \frac{1}{3} \cdot \frac{8}{29} = \boxed{\frac{8}{87}}$$

LA RESPUESTA ES:
 $\frac{10}{30} \cdot \frac{8}{29}$

Fórmula = blancas/total · negras/(total-1)

Con reemplazo

"Sacar 3 bolas y que sean todas de diferentes colores."

Segunda extracción

Tercera extracción

Primera extracción

$$P(B_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(B_2|B_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_2|B_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_2|B_1) = \frac{8}{30} = \frac{4}{15}$$

$$P(B_2|R_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_2|R_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_2|R_1) = \frac{8}{30} = \frac{4}{15}$$

$$P(B_2|N_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(R_2|N_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_2|N_1) = \frac{8}{30} = \frac{4}{15}$$

$$P(R_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_1) = \frac{8}{30} = \frac{4}{15}$$

$$P(B_1 \cap R_2 \cap N_3) = \frac{1}{3} \cdot \frac{2}{5} \cdot \frac{4}{15}$$

$$P(B_1 \cap N_2 \cap R_3) = \frac{1}{3} \cdot \frac{4}{15} \cdot \frac{2}{5}$$

$$P(3 \text{ bolas } \neq) = 6 \cdot \frac{1}{3} \cdot \frac{2}{5} \cdot \frac{4}{15} =$$

$$= \frac{2 \cdot 3 \cdot 2 \cdot 4}{3 \cdot 5 \cdot 15} = \frac{16}{75}$$

LA RESPUESTA ES:

$$6 \cdot \frac{10}{30} \cdot \frac{12}{30} \cdot \frac{4}{30}$$

$$= 0,2133$$

Fórmula = 6 · blancas/total · rojas/total · negras/total

Sin reemplazo

"Sacar 3 bolas y que sean todas de diferentes colores."

Primera extracción

Segunda extracción (29)

Tercera extracción (28)

(30)

$$P(B_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(B_2|B_1) = \frac{9}{29}$$

$$8/28$$

$$12/28$$

$$8/28$$

$$9/28$$

$$11/28$$

$$8/28$$

$$9/28$$

$$12/28$$

$$7/28$$

$$9/28$$

$$11/28$$

$$8/28$$

$$10/28$$

$$10/28$$

$$8/28$$

$$10/28$$

$$11/28$$

$$7/28$$

$$9/28$$

$$12/28$$

$$7/28$$

$$10/28$$

$$11/28$$

$$7/28$$

$$10/28$$

$$12/28$$

$$6/28$$

$$P(P_2|B_1) = \frac{12}{29}$$

$$P(N_2|B_1) = \frac{8}{29}$$

$$P(B_2|P_1) = \frac{10}{29}$$

$$P(P_2|P_1) = \frac{11}{29}$$

$$P(N_2|P_1) = \frac{8}{29}$$

$$P(B_2|N_1) = \frac{10}{29}$$

$$P(P_2|N_1) = \frac{12}{29}$$

$$P(N_2|N_1) = \frac{7}{29}$$

$$P(P_1) = \frac{12}{30} = \frac{2}{5}$$

$$P(N_1) = \frac{8}{30} = \frac{4}{15}$$

$$\frac{1}{3} \cdot \frac{12}{29} \cdot \frac{8}{28}$$

$$\frac{1}{3} \cdot \frac{8}{29} \cdot \frac{12}{28}$$

$$\frac{2}{5} \cdot \frac{10}{29} \cdot \frac{8}{28}$$

$$\frac{2}{5} \cdot \frac{8}{29} \cdot \frac{10}{28}$$

$$\frac{4}{15} \cdot \frac{10}{29} \cdot \frac{12}{28}$$

$$\frac{4}{15} \cdot \frac{12}{29} \cdot \frac{10}{28}$$

SUMAR

Sin reemplazo

"Sacar 3 bolas y que sean todas de diferentes colores."

Primera extracción

Segunda extracción (29)

Tercera extracción (28)

$$P(B_1) = \frac{10}{30} = \frac{1}{3}$$

$$P(B_2|B_1) = \frac{9}{29}$$

$$8/28$$

$$12/28$$

$$8/28$$

$$9/28$$

$$11/28$$

$$8/28$$

$$9/28$$

$$12/28$$

$$7/28$$

$$9/28$$

$$11/28$$

$$8/28$$

$$10/28$$

$$10/28$$

$$8/28$$

$$10/28$$

$$11/28$$

$$7/28$$

$$9/28$$

$$12/28$$

$$7/28$$

$$10/28$$

$$11/28$$

$$7/28$$

$$10/28$$

$$12/28$$

$$6/28$$

$$P(R_2|B_1) = \frac{12}{29}$$

$$P(N_2|B_1) = \frac{8}{29}$$

$$P(B_2|R_1) = \frac{10}{29}$$

$$P(R_2|R_1) = \frac{11}{29}$$

$$P(N_2|R_1) = \frac{8}{29}$$

$$P(B_2|N_1) = \frac{10}{29}$$

$$P(R_2|N_1) = \frac{12}{29}$$

$$P(N_2|N_1) = \frac{7}{29}$$

$$P(R_1) = \frac{12}{30} = \frac{6}{15} = \frac{2}{5}$$

$$P(N_1) = \frac{8}{30} = \frac{4}{15}$$

$$\frac{10}{30} \cdot \frac{12}{29} \cdot \frac{8}{28}$$

$$\frac{10}{30} \cdot \frac{8}{29} \cdot \frac{12}{28}$$

$$\frac{12}{30} \cdot \frac{10}{29} \cdot \frac{8}{28}$$

$$\frac{12}{30} \cdot \frac{8}{29} \cdot \frac{10}{28}$$

$$\frac{8}{30} \cdot \frac{10}{29} \cdot \frac{12}{28}$$

$$\frac{8}{30} \cdot \frac{12}{29} \cdot \frac{10}{28}$$

SUMAR =

$$6 \cdot \frac{10 \cdot 12 \cdot 8}{30 \cdot 29 \cdot 28} =$$

$$= \frac{48}{203} = 0,2365$$

LA RESPUESTA ES:

$$\text{Fórmula} = 6 \cdot \text{blancas/total} \cdot \text{rojas/(total-1)} \cdot \text{negras/(total-2)}$$