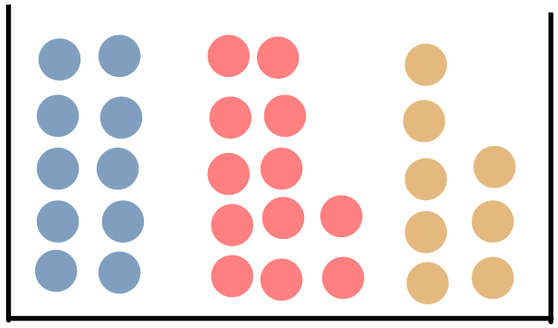
Con reemplazo

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



30 TOTALES

Primera extracción

Segunda extracción

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

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

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

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

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

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

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

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

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

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

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

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

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

LA RESPUESTA ES:

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

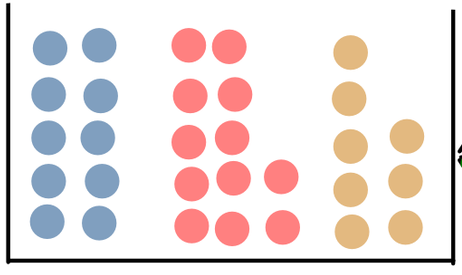
Fórmula = blancas/total · negras/total

Sin reemplazo

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

Primera extracción

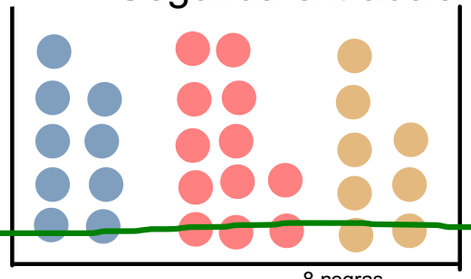
Segunda extracción



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

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

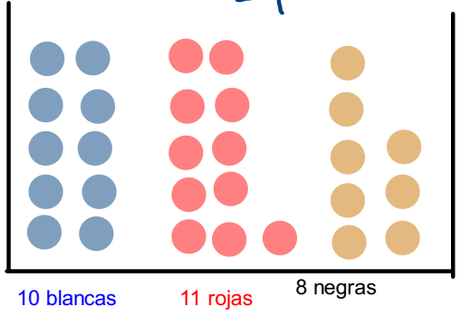
$P(N_1) = \frac{8}{30} = \frac{4}{15}$



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

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

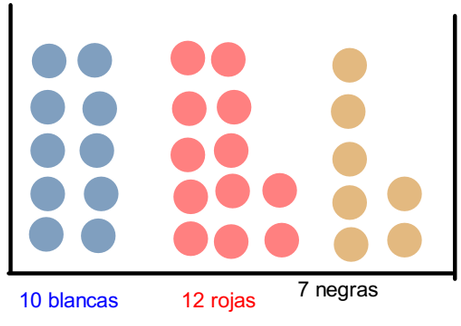
$P(N_2|B_1) = \frac{8}{29}$



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

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

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



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

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

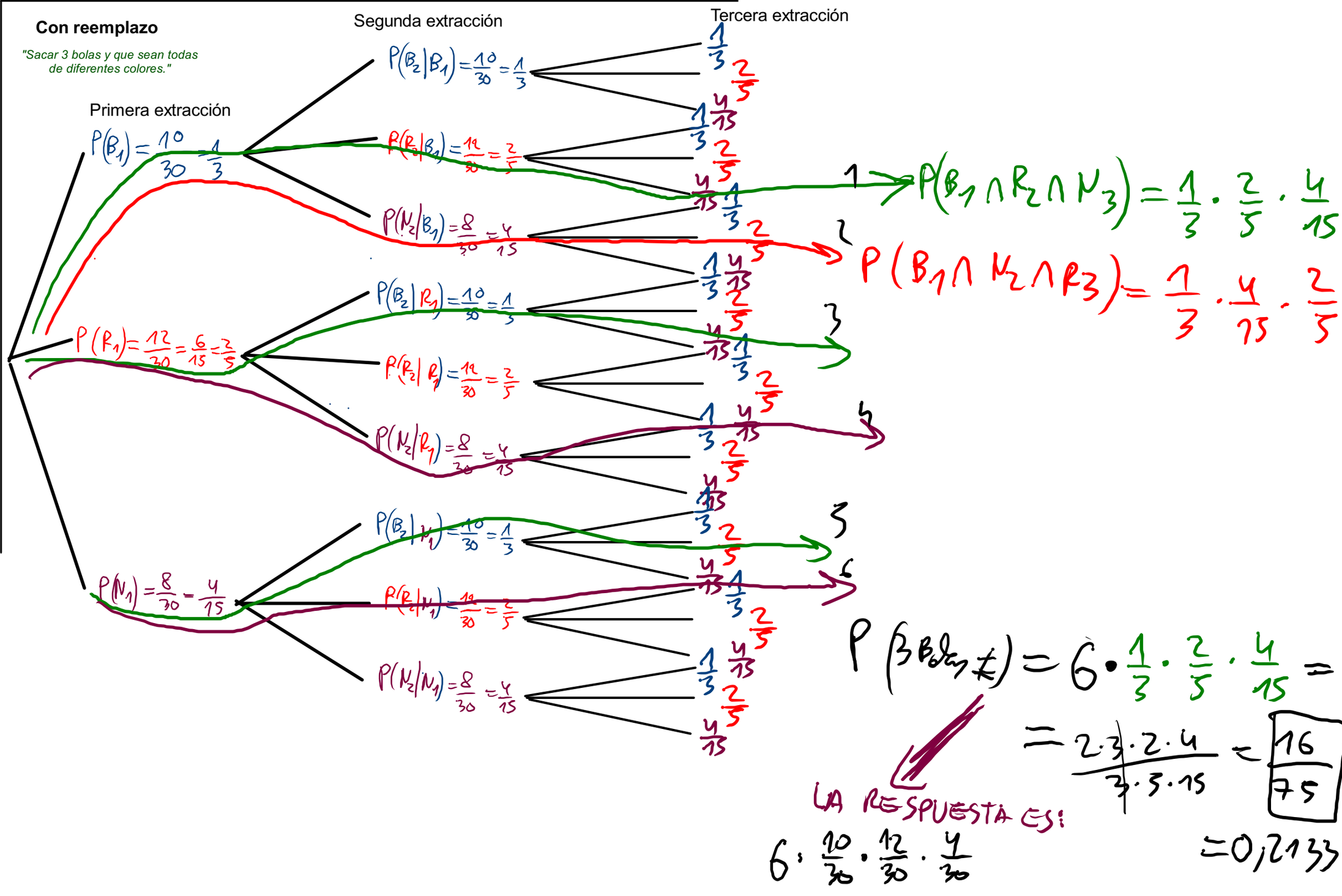
$P(N_2|N_1) = \frac{7}{29}$

$P(B_1 \cap N_2) = P(B_1) \cdot P(N_2|B_1) = \frac{1}{3} \cdot \frac{8}{29} = \boxed{\frac{8}{87}}$

LA RESPUESTA ES:

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

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



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

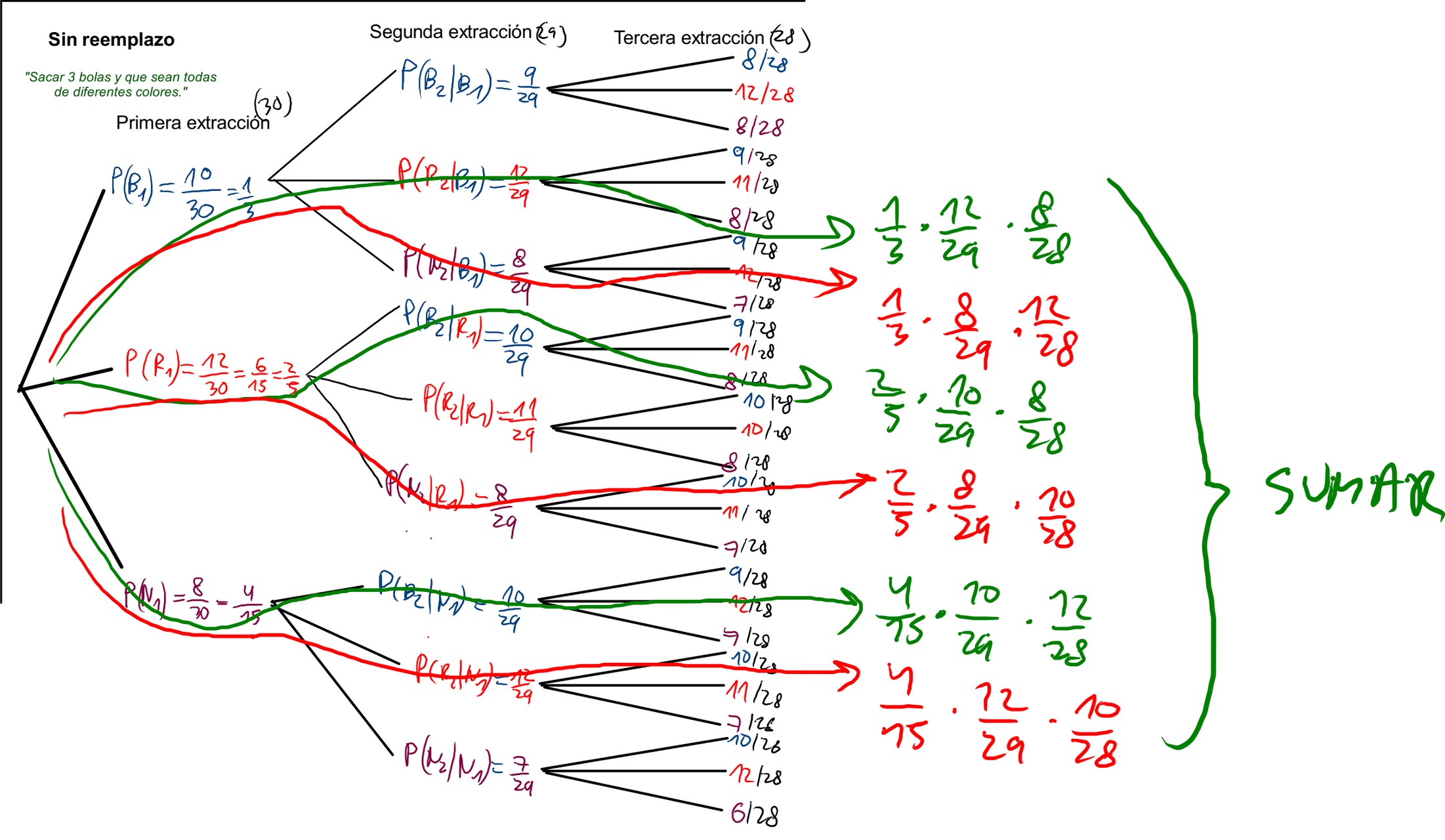
$$P(B_1 \cap N_2 \cap R_3) = \frac{1}{3} \cdot \frac{4}{15} \cdot \frac{2}{5}$$

$$P(3 \text{ Bolas} \neq) = 6 \cdot \frac{1}{3} \cdot \frac{2}{5} \cdot \frac{4}{15} = \frac{2 \cdot 3 \cdot 2 \cdot 4}{3 \cdot 5 \cdot 15} = \frac{16}{75} = 0{,}2133$$

LA RESPUESTA ES:

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

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


Sin reemplazo
"Sacar 3 bolas y que sean todas de diferentes colores."
Primera extracción (30)
Segunda extracción (29)
Tercera extracción (28)
$P(B_1) = \frac{10}{30} = \frac{1}{3}$
$P(R_1) = \frac{12}{30} = \frac{6}{15} = \frac{2}{5}$
$P(N_1) = \frac{8}{30} = \frac{4}{15}$
$P(B_2/B_1) = \frac{9}{29}$
$P(R_2/B_1) = \frac{12}{29}$
$P(N_2/B_1) = \frac{8}{29}$
$P(B_2/R_1) = \frac{10}{29}$
$P(R_2/R_1) = \frac{11}{29}$
$P(N_2/R_1) = \frac{8}{29}$
$P(B_2/N_1) = \frac{10}{29}$
$P(R_2/N_1) = \frac{12}{29}$
$P(N_2/N_1) = \frac{7}{29}$
8/28
12/28
8/28
9/28
11/28
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9/28
12/28
7/28
9/28
11/28
8/28
10/28
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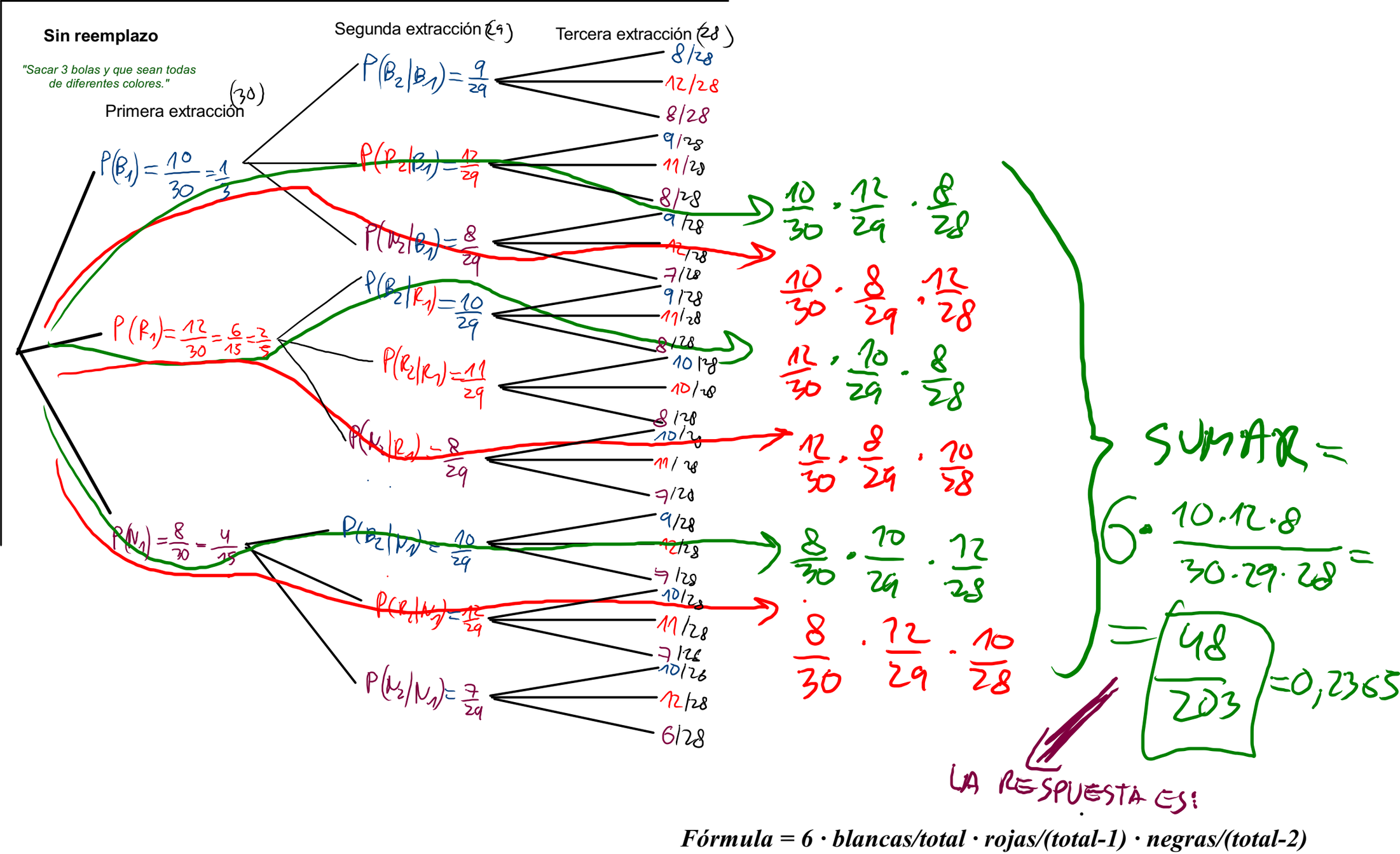
11/28
7/28
9/28
12/28
9/28
10/28
11/28
7/28
10/28
12/28
6/28
$\frac{1}{3} \cdot \frac{12}{29} \cdot \frac{8}{28}$
$\frac{1}{3} \cdot \frac{8}{29} \cdot \frac{12}{28}$
$\frac{2}{5} \cdot \frac{10}{29} \cdot \frac{8}{28}$
$\frac{2}{5} \cdot \frac{8}{29} \cdot \frac{10}{28}$
$\frac{4}{15} \cdot \frac{10}{29} \cdot \frac{12}{28}$
$\frac{4}{15} \cdot \frac{12}{29} \cdot \frac{10}{28}$
SUMAR



Fórmula = 6 · blancas/total · rojas/(total-1) · negras/(total-2)