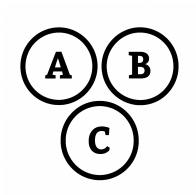
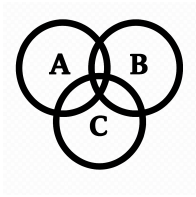
S Probability S



$S = \{B, B, R, R, R\}$



$$\text{(S, BB)} = \text{(S, B)} \times \text{(S, B)} = 0.40 \times 0.25 = 0.10$$
$$\text{(S, BR)} = \text{(S, B)} \times \text{(S, R)} = 0.40 \times 0.75 = 0.30$$
$$\text{(S, RB)} = \text{(S, R)} \times \text{(S, B)} = 0.60 \times 0.50 = 0.30$$
$$\text{(S, RR)} = \text{(S, R)} \times \text{(S, R)} = 0.60 \times 0.50 = 0.30$$

$$\text{(S, BB)} = \text{(S, B)} \times \text{(S, B)} = 0.40 \times 0.40 = 0.16$$
$$\text{(S, BR)} = \text{(S, B)} \times \text{(S, R)} = 0.40 \times 0.60 = 0.24$$
$$\text{(S, RB)} = \text{(S, R)} \times \text{(S, B)} = 0.60 \times 0.40 = 0.24$$
$$\text{(S, RR)} = \text{(S, R)} \times \text{(S, R)} = 0.60 \times 0.60 = 0.36$$

?

$S = \{M, M, M, M, M, M, M, M, M, M, F, F, F, F, F, F, F, F, F, F, F\}$
$T = \{M, M, M, M, M, M, M, M, M, M\}$
$U = \{F, F, F, F, F, F, F, F, F, F, F\}$
$P(\text{(T, MM)} \times \text{(U, FF)}) = ?$

S Probability S

$$S = \{M, M, M, M, M, M, M, M, M, M, F, F, F, F, F, F, F, F, F, F, F\}$$
$$T = \{M, M, M, M, M, M, M, M, M, M\}$$
$$U = \{F, F, F, F, F, F, F, F, F, F, F\}$$
$$\text{⩷}(S, 4) = \binom{22}{4} = \frac{22!}{4!,18!} = \frac{22 \times 21 \times 20 \times 19}{4 \times 3 \times 2 \times 1} = \frac{175{,}560}{24} = 7{,}315$$
$$\text{⩷}(T, MM) = \binom{10}{2} = 45$$
$$\text{⩷}(U, FF) = \binom{12}{2} = 66$$
$$P(\text{⩷}(T, MM) \times \text{⩷}(U, FF)) = (\text{⩷}(T, MM) \times \text{⩷}(U, FF))/\text{⩷}(S, 4) = 45 \times 66/7{,}315 \approx 0.41$$