

① Order does not matter $\rightarrow$ Combination.

$$C(12, 4) = \boxed{495}$$

② Exactly 4 technical reps:

$$C(8, 4) \cdot 9 = 630$$

of ways to select 4 tech reps from 8 tech reps. # of ways to select 1 sales rep.

$$\text{Exactly 5 tech reps: } C(8, 5) = 56$$

$\rightarrow$ In total, there are $630 + 56 = \boxed{686}$ ways.

③ $P(\text{not green apple}) = \frac{12}{15} = \boxed{\frac{4}{5}}$

⑤ odds of spinning A: success : failure
 $\boxed{3 : 5}$

⑥ # juniors on seniors = 116

juniors on seniors who prefer veggie = 45.

$$\rightarrow \text{Answer} = \frac{45}{116} \approx \boxed{0.388}$$

$$\begin{aligned} \textcircled{7} P(F|E') &= \frac{P(F \cap E')}{P(E')} = \frac{n(F \cap E')}{n(E')} \\ &= \frac{468}{1492} = \frac{117}{373} \end{aligned}$$

⑧

$$\begin{aligned} P(X|A) &= \frac{P(X \cap A)}{P(A)} \\ &= \frac{a \cdot c}{a \cdot c + b \cdot c} \\ &= \frac{(0.9)(0.2)}{(0.9)(0.2) + (0.1)(0.4)} \\ &= \boxed{0.818} \end{aligned}$$

⑨ $P(\text{at least 3 leaves left})$

$$= P_3 + P_4 + P_5 + P_6 = \boxed{0.35}$$

$$\begin{aligned} \textcircled{10} \text{Mean} &= \frac{\$1200 + \$800 + \$400 \cdot 5 + \$700 \cdot 3}{10} \\ &= \boxed{\$610} \end{aligned}$$

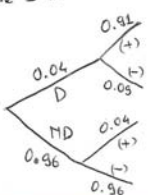
$$\textcircled{11} \frac{11.2 + 14.3 + 17.8 + 20.4}{17} \approx 16.47$$

⑫ Median = 150.

⑬ Mode = 2

⑭

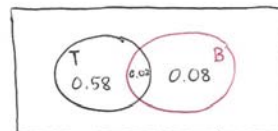
$$\begin{aligned} P(D|+) &= \frac{P(D \cap +)}{P(+)} \\ &= \frac{(0.04)(0.91)}{(0.04)(0.91) + (0.96)(0.04)} \\ &\approx 0.4866 \end{aligned}$$



$$\textcircled{15} C(14, 8) \cdot C(6, 4) = \boxed{45045}$$

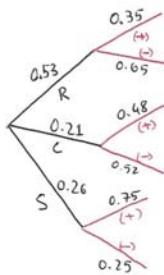
of ways to select 8 women from 14 women # of ways to select 4 men from 6 men

⑮



$$\begin{aligned} P(T' \cap B') &= 1 - (0.58 + 0.02 + 0.08) \\ &= \boxed{0.32} \end{aligned}$$

17



$$P(R|+) = \frac{P(R \cap +)}{P(+)}$$

$$= \frac{(0.53)(0.35)}{[(0.53)(0.35) + (0.21)(0.48) + (0.26)(0.75)]}$$

$$\approx 0.385$$

Interval	Freq.
0-4	3
5-9	4
10-14	5
15-19	5
20-24	3

19 If it does not rain, his gaining is:

$$\$300,000 - \$30,000 = \$270,000$$

profit insurance premium

If it does rain, his earning is:

$$+ \$60,000 + \$120,000$$

profit total insurance payout - premium

$$= 180,000$$

Table:

X_i	\$270,000	\$180,000
P_i	0.66	0.34
	no rain	rain

$$\text{Expected earning} = (270,000)(0.66) + (180,000)(0.34)$$

$$= \$239,400$$