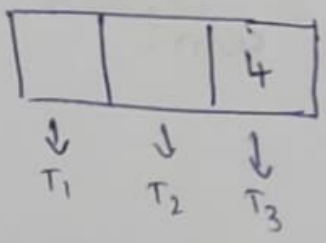
(8)

E : 4 appears on the third Toss.

Let T denotes the tossing of die.



Given $T_3 = \{4\}$.

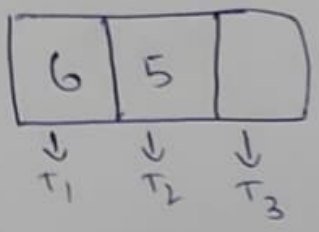
Now, T_1 and T_2 both can have 6 chances. (From 1 to 6).

Hence, Total outcomes are $6 \times 6 = 36$.

Sample space $(\Omega) = 6 \times 6 \times 6 = 216$.

$\therefore P(E) = \frac{36}{216} = \frac{1}{6}$.

F : 6 and 5 appears respectively on first two tosses.



Given $T_1 = \{6\}$ and $T_2 = \{5\}$.

Total outcomes are 6.

$\therefore P(F) = \frac{6}{216} = \frac{1}{36}$, $E \cap F = \{6, 5, 4\}$.

$P(E \cap F) = \frac{1}{216}$.

$\therefore P(E/F) = \frac{P(E \cap F)}{P(F)} = \frac{1/216}{1/36} = \frac{36}{216} = \frac{1}{6}$.