

5) Four cards are successively drawn without replacement from a deck of 52 playing cards. What is the probability that all four cards are kings?

-  $E_1, E_2, E_3$  &  $E_4$  → events of drawing first, second, third & fourth cards.

$$P(E_1 \cap E_2 \cap E_3 \cap E_4) = \frac{4}{52} \cdot \frac{3}{51} \cdot \frac{2}{50} \cdot \frac{1}{49}$$
$$= \frac{1}{13 \cdot 17 \cdot 25 \cdot 49} = \frac{1}{270725}$$