





1

2

The probability that both of them are selected :-  $P(A \cap B) = P(A) * P(B)$

$$= \frac{2}{5} * \frac{3}{7} = \frac{6}{35}$$

3

In cards, there is 4 queens and 13 Clubs

Let A be the event of queen, B be the event of club.

$$P(A) = \frac{4}{52}, \quad P(B) = \frac{13}{52}$$

There is one queen already in the club cards, so we need to subtract one from either queens or clubs

$$P(A \cup B) = P(A) + P(B) - \frac{1}{52} = \frac{4}{52} + \frac{13}{52} - \frac{1}{52} = \frac{16}{52}$$







## probability practice problems

①  $n(S) = 6$ , probability of getting 3

$P(A) = \frac{1}{6}$ , probability of getting 4 =  $\frac{1}{6}$

$$P(A \cup B) = \frac{1}{6} + \frac{1}{6} = \frac{1}{3} \quad \underline{\underline{1 \text{ in } 3}}$$

② there's three coins,  $n(S) = 2^3 = 8$

$P(H) = P(T)$  in a single coin,  $P(H) = P(T) = \frac{1}{2}$

we want two heads, and one tail.

$$P(H, H, T) = P(H, T, H) = P(T, H, H)$$
$$= \frac{1}{2} * \frac{1}{2} * \frac{1}{2} = \frac{1}{8}$$

$$P(\text{two heads and one tail}) = \frac{3}{8}$$

3 multiples of 7 that has two digits are 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98

No. two digit numbers = ~~10~~ 99 - 10 + 1 = 90  
Probability =  $\frac{1}{13}$

Probability =  $\frac{13}{90}$



5

Thursday  
January

١٢ جمادى آخر ١٤٤٤ هـ

الحميس  
يناير

٥

Week 1

٢٧ كيهك ١٧٣٩ ق

أسبوع ١

[4] 14 blue, 6 red, 12 green, 8 purple

total number of buttons = 40

8:00

9:00

10:00

11:00

12:00

☀

1:00

2:00

3:00

4:00

5:00

6:00

7:00

8:00

So, there was only one red button removed

$$\boxed{6 - 5 = 1}$$

total

remaining

[5] 6 blue, 3 red, 5 yellow, total = 14 = n(S)

P(blue or red)

$$= P(B \cup R) = \frac{6}{14} + \frac{3}{14} = \frac{9}{14}$$

[6] probability of getting a six =  $\frac{1}{6}$  for

any single toss, because rolls are independent

So after 4 rolls, the probability of getting 6

$$\text{is still} = \frac{1}{6}$$

Sun. Mon. Tue. Wed. Thu. Fri. Sat. Sun. Mon. Tue. Wed. Thu. Fri. Sat. Sun. Mon. Tue. Wed. Thu. Fri. Sat.

1 2 3 4 5 6 7 8 9 10 11 12



4

Wednesday  
January

WEDNESDAY

الأربعاء  
يناير

٤

WEDNESDAY

Week 1

[7] in deck of cards, there is 4 aces, total cards = 52  
in the first time we draw a card, probability of  
this card to be Ace =  $\frac{4}{52}$

in the second time, now total cards = 51, total  
Aces left =  $\frac{3}{51}$   $\therefore$  probability =  $\frac{3}{51}$

[8] in the third time, probability =  $\frac{2}{50} = \frac{1}{25}$

$\therefore$  probability of 3 Aces in a row

$$= \frac{4}{52} * \frac{3}{51} * \frac{2}{50} = \frac{1}{5525}$$

[8] Each time we play a song, this event is independent of the event that happened before, because we choose songs randomly and it might be repeated

$$\therefore P(D) = \frac{5}{15} = \frac{1}{3}$$



3

Tuesday  
January

١٠ جمادى آخر ١٤٤٤ هـ

الثلاثاء  
يناير

٣

Week 1

٢٥ كيهك ١٧٣٩ ق

أسبوع ١

$$\boxed{9} \quad p(B) = \frac{3}{15} = \frac{1}{5}$$

8.00 since event are independent

9.00

10.00

11.00

12.00



1.00

∴ Probability of both songs to be by Band B

$$= p(B) * p(B) = \frac{1}{5} * \frac{1}{5} = \frac{1}{25}$$

«intersection»

$\boxed{10}$  47 white, 5 yellow, 10 black

2.00

3.00

4.00

5.00

6.00

7.00

8.00

$$p(\text{black}) = \frac{10}{15+47} = \frac{10}{62} = 16\%$$

2

Monday  
January

٩ جمادى الآخرة ١٤٤٤ هـ

الأثنين  
يناير

٢

Week 1

٢٤ كلك ١٧٣٩ ق

السنة ١٤٩٥

11 there is two winners for every one hundred tickets  $\Rightarrow P(\text{winning}) = \frac{2}{100} = 0.02$

probability of winning if the man buys 10 tickets  $= 0.02 * 10 = 20\%$