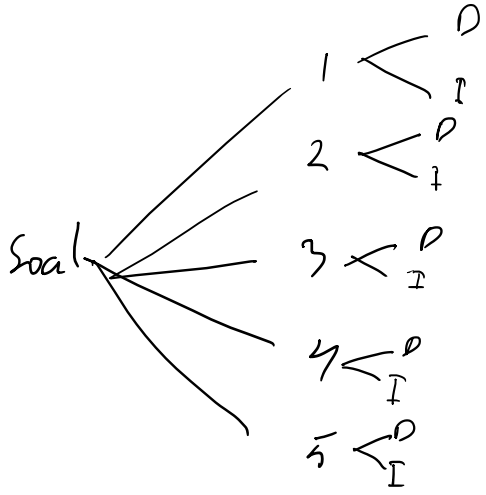
1.



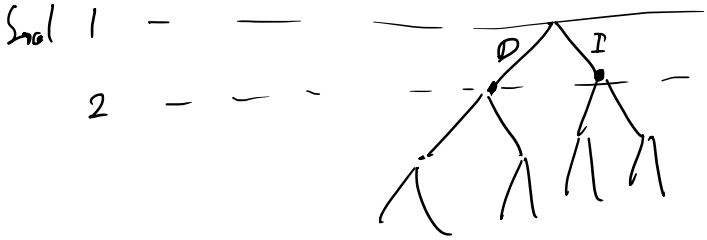
D	4 D I	3 D 2 I	3 D 3 I	1 D 4 I	5 I
1	5	10	10	5	1

2^5 = 32 cara menjawab

Step 1 → Soal 1 = 2
2 → 2 = 2
3 → 2 = 2
4 → 4 = 2
5 → 5 = 2

$2^5 = 32$

$n_1 = 5 \quad n_2 = 2$



2. 3, 4, 5, 6 → 4 angka tidak boleh ada angka yg berulang

4 × 3 = 12 bilangan

$${}_4P_2 = \frac{4!}{(4-2)!} = \frac{4!}{2!} = \frac{4.3.2!}{2!} = 12$$

$9! = 9.8.7.6.5.4.3.2.1$

$5! = 5.4.3.2.1$

3.

$${}_9P_4 = \frac{9!}{(9-4)!} = \frac{9.8.7.6.5!}{5!} = 3024$$ kombinasi angka 4 digit

4 angka sama = ${}_9P_1 = \frac{9!}{(9-1)!} = 9$

3 angka sama = ${}_9P_2 = \frac{9!}{(9-2)!} = \frac{9.8.7!}{7!} = 72$

2 angka sama = ${}_9P_3 = \frac{9!}{(9-3)!} = \frac{9.8.7.6!}{6!} = 504$

A = kejadian angka kembar

$$P(A) = \frac{9+72+504}{3024} = \frac{585}{3024} = \frac{65}{336}$$

4. 2, 6, 7, 9

* Angka boleh berulang | 4 | 4 | 4 |

$4^3 = 64$ kombinasi

* Angka tidak boleh berulang | 4 | 3 | 2 |

$_4P_3 = \frac{4!}{(4-3)!} = \frac{4.3.2.1}{1!} = 24$ kombinasi

5. 2, 6, 7, 9

Angka boleh berulang

* kombinasi 4 digit < 6000

= 0 kombinasi

* kombinasi 3 digit < 6000

$4^3 = 64$ kombinasi

* kombinasi 2 digit < 6000

$4^2 = 16$ kombinasi

* kombinasi 1 digit < 6000

= 4 kombinasi

Total = 64 + 16 + 4 = 84 kombinasi

Angka tidak boleh berulang

* kombinasi 4 digit < 6000

= 0 kombinasi

* kombinasi 3 digit < 6000

$_4P_3 = 4.3.2 = 24$ kombinasi

* kombinasi 2 digit < 6000

$_4P_2 = 4.3 = 12$ kombinasi

* kombinasi 1 digit < 6000

= 4 kombinasi

Total = 24 + 12 + 4 = 40 kombinasi

6. 2, 6, 7, 9

Boleh berulang

* 3 digit < 600

| 2 | 3 | 4 | = 24

* 2 digit < 600

| 4 | 4 | = 16

* 1 digit < 600

| 4 | = 4

Total = 24 + 16 + 4 = 44

Tidak boleh berulang

* 3 digit < 600

6 P 0

| 2 | 2 | 2 | = 8

2 6 2/6 7

* 2 digit < 600

| 4 | 3 | = 12

$_4P_2 = 12$

* 1 digit < 600

= 4

Total = 8 + 12 + 4 = 24

7. 2 merah, 3 biru, 4 kuning

$${}_9C_2 = \frac{9!}{2!(9-2)!} = \frac{9 \cdot 8 \cdot 7!}{2! \cdot 7!} = 36$$

a. ${}_2C_1 = \frac{2!}{1!\,1!} = 2$

${}_3C_1 = \frac{3!}{1!\,2!} = 3$

${}_4C_1 = \frac{4!}{1!\,3!} = 4$

} Total = 9

$$P(A) = \frac{9}{36} = \frac{1}{4}$$