

Lista 05

①

$\{1, 2, 3\}$
 $\{1\}, \{2\}, \{3\}, \{1, 2\}, \{2, 3\}, \{1, 3\}, \{1, 2, 3\}$

$\{1, 2, 3, 4\}$

$\{1\}, \{2\}, \{3\}, \{4\}, \{1, 2\}, \{2, 3\}, \{3, 4\}, \{1, 3\}, \{1, 4\}, \{2, 4\}, \{1, 2, 3\}, \{2, 3, 4\}, \{1, 3, 4\}, \{1, 2, 4\}, \{1, 2, 3, 4\}$

② a) STAPLE

$$6 \rightarrow 6! = 720$$

b) DISCRETE

$$8, E \times 2 \rightarrow \frac{8!}{2!} = 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 = 20160$$

c) MATHEMATICS

$$11, A \times 2, M \times 2, T \times 2 = \frac{11!}{2!2!2!} = 4,789,600$$

d) MISSISSIPPI

$$10 \rightarrow \frac{10!}{4!4!} = 6300$$

③ SUCCES

$$\frac{5}{5, 5 \times 2} = \frac{5!}{2!} = 60$$

④ Cook Time 10 $\rightarrow 10! \cdot 10!$
 $\frac{20!}{10! \cdot 10!} = 184,756$

⑤ 100
 $\frac{100!}{90! \cdot 10!} = 17.310.309.456.440$
 $\frac{100 \times 99 \times 98 \times 97 \times 96 \times 95 \times 94 \times 93 \times 92 \times 91}{10!}$

⑥ Se $P \neq \{1, 2\}$ ou $\{1, 3\}, \{2, 3\}$
 int. no i perim. $A = P$

⑦ $\{1, 2, 3, 4, 5, 6, 7\}$

1 $\{1, 2, 3\}$	2 $\{4, 5, 6, 7\}$	3 $\{1, 6, 7\}$	4 $\{2, 3, 4, 5\}$	5 $\{3, 5, 6\}$	6 $\{1, 2, 4, 7\}$
7 $\{1, 2, 4\}$	8 $\{3, 5, 6, 7\}$	9 $\{2, 3, 4\}$	10 $\{1, 5, 6, 7\}$	11 $\{6, 5, 7\}$	12 $\{1, 2, 4, 6\}$
13 $\{1, 2, 5\}$	14 $\{3, 4, 6, 7\}$	15 $\{2, 3, 5\}$	16 $\{1, 4, 6, 7\}$	17 $\{3, 6, 7\}$	18 $\{1, 2, 4, 5\}$
19 $\{1, 2, 6\}$	20 $\{3, 4, 5, 7\}$	21 $\{2, 3, 6\}$	22 $\{1, 4, 5, 7\}$	23 $\{4, 5, 7\}$	24 $\{1, 2, 3, 7\}$
25 $\{1, 2, 7\}$	26 $\{3, 4, 5, 6\}$	27 $\{2, 3, 7\}$	28 $\{1, 4, 5, 6\}$	29 $\{4, 6, 7\}$	30 $\{1, 2, 3, 6\}$
31 $\{1, 3, 4\}$	32 $\{2, 5, 6, 7\}$	33 $\{2, 4, 5\}$	34 $\{1, 3, 6, 7\}$	35 $\{5, 6, 7\}$	36 $\{1, 2, 3, 4\}$
37 $\{1, 3, 5\}$	38 $\{2, 4, 6, 7\}$	39 $\{2, 4, 6\}$	40 $\{1, 3, 5, 6\}$	41 $\{4, 5, 6\}$	42 $\{1, 2, 3, 7\}$
43 $\{1, 3, 6\}$	44 $\{2, 4, 5, 7\}$	45 $\{2, 4, 7\}$	46 $\{1, 3, 4, 7\}$		
47 $\{1, 3, 7\}$	48 $\{2, 4, 5, 6\}$	49 $\{2, 5, 6\}$	50 $\{1, 3, 4, 6\}$		
51 $\{1, 4, 5\}$	52 $\{2, 3, 6, 7\}$	53 $\{2, 5, 7\}$	54 $\{1, 3, 4, 5\}$		
55 $\{4, 4, 6\}$	56 $\{2, 3, 5, 7\}$	57 $\{2, 6, 7\}$	58 $\{1, 2, 6, 7\}$		
59 $\{1, 4, 7\}$	60 $\{2, 3, 5, 6\}$	61 $\{3, 4, 5\}$	62 $\{1, 2, 5, 7\}$		
63 $\{1, 5, 6\}$	64 $\{2, 3, 4, 7\}$	65 $\{3, 4, 6\}$	66 $\{1, 2, 5, 7\}$		
67 $\{1, 5, 7\}$	68 $\{2, 3, 4, 6\}$	69 $\{3, 4, 7\}$	70 $\{1, 2, 5, 6\}$		

8) a) $(x+y)^6$

$$\begin{array}{ccccccc}
 & & & & 1 & & \\
 & & & 1 & 1 & & \\
 & & 1 & 2 & 1 & & \\
 & 1 & 3 & 3 & 1 & & \\
 & 1 & 4 & 6 & 4 & 1 & \\
 & 1 & 5 & 10 & 10 & 5 & 1 \\
 1 & 6 & 15 & 20 & 15 & 6 & 1
 \end{array}$$

$$x^6 + 6x^5y + 15x^4y^2 + 20x^3y^3 + 15x^2y^4 + 6xy^5 + y^6$$

b) $(x+b)^8$

$$\begin{array}{ccccccc}
 & & & & & & 1 \\
 & & & & 1 & 1 & \\
 & & 1 & 2 & 1 & & \\
 & 1 & 3 & 3 & 1 & & \\
 & 1 & 4 & 6 & 4 & 1 & \\
 & 1 & 5 & 10 & 10 & 5 & 1 \\
 & 1 & 6 & 15 & 20 & 15 & 6 & 1 \\
 & 1 & 7 & 21 & 35 & 35 & 21 & 7 & 1 \\
 1 & 8 & 28 & 56 & 70 & 56 & 28 & 8 & 1
 \end{array}$$

$$x^8 + 8x^7b + 28x^6b^2 + 56x^5b^3 + 70x^4b^4 + 56x^3b^5 + 28x^2b^6 + 8xb^7 + b^8$$