

ES

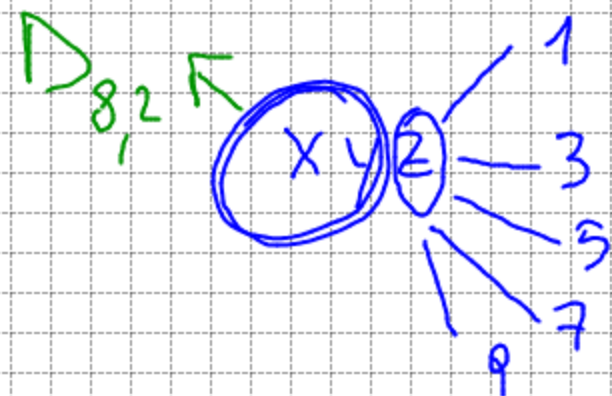
$$D_{m,k} = m \cdot (m-1) \cdot \dots \cdot (m-k+1)$$

$$D_{24,3} = 24 \cdot \dots \cdot \underbrace{(24-3+1)}_{22} = 24 \cdot 23 \cdot 22$$

$$D_{24,2} = 24 \cdot \dots \cdot (24-2+1) = 24 \cdot 23$$

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1, 2, 3, 4, 5, 6, 7, 8, 9

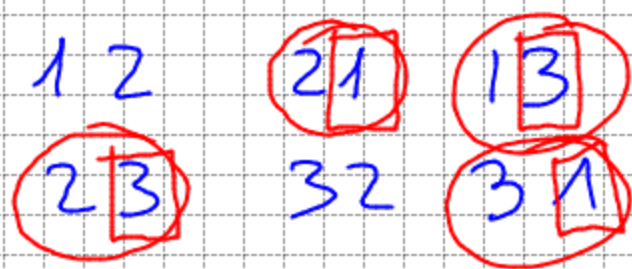


a)  $D_{9,3} = 9 \cdot \dots \cdot (9-3+1) = 9 \cdot 8 \cdot 7 = 504$

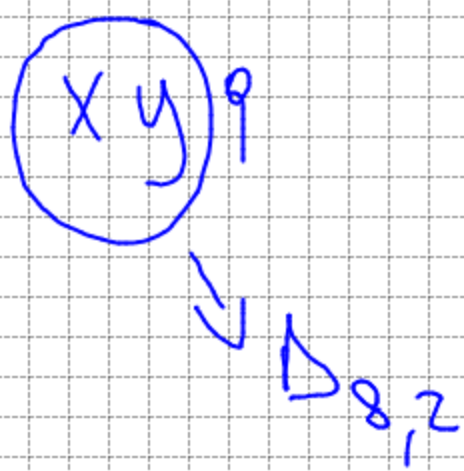
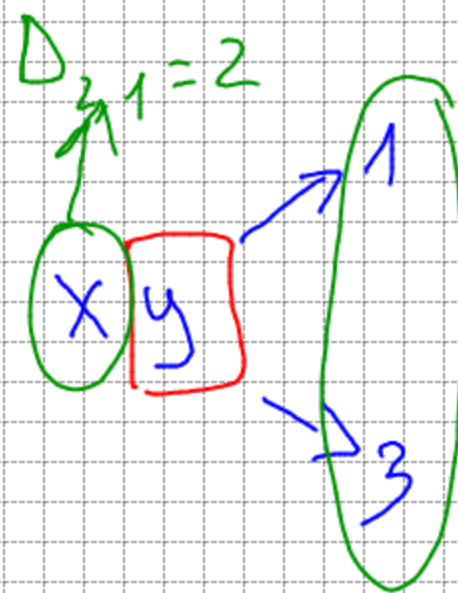
b) quanti sono dispari

$$X : 504 = 5 : 9$$

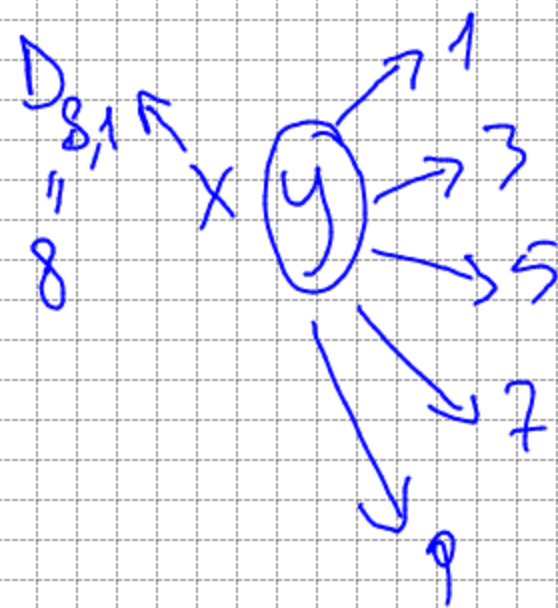
$$D_{8,2} = 8 \cdot 7 = 56 \Rightarrow 5 D_{8,2} = 280$$



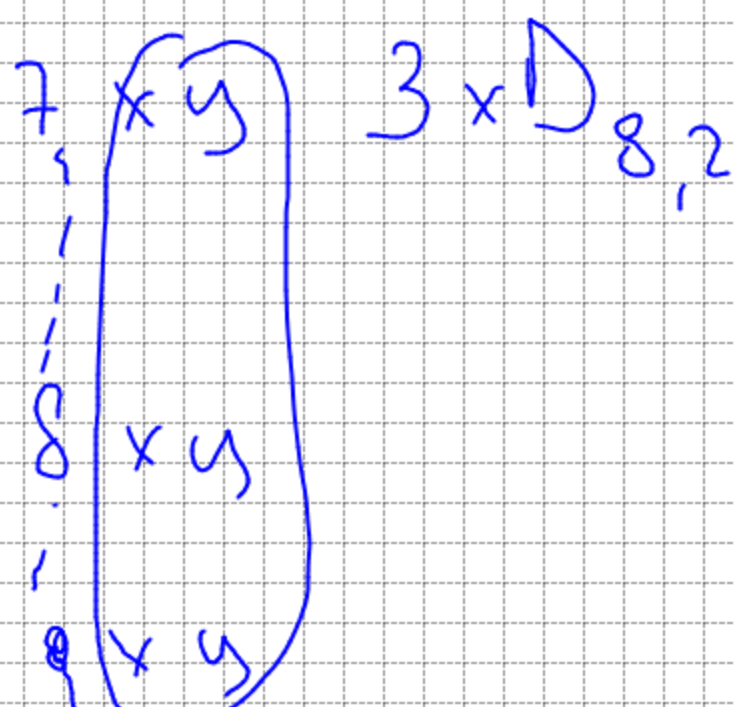
$$D_{3,2} = 3 \cdot 2 = 6$$



$$D_{8,2} = 8 \cdot 7 = 56$$



maggiori di 700



N 4, PAG 180

$m \in \mathbb{N}$

$$\frac{(m+4)!}{m!} =$$

$$m! = m(m-1)(m-2) \dots 1$$

$$0! = 1! = 1$$

$$= \frac{(m+4)(m+3)(m+2)(m+1) \cancel{m!}}{\cancel{m!}}$$

$$5! = \overbrace{5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$$

$$\frac{(2m)!}{m!} = \frac{(2m)(2m-1) \dots (2m-m+1) \cancel{(2m-m)!}}{\cancel{m!}}$$

$$= 2m(2m-1) \dots (m+1)$$

N 5

$$\frac{(m+3)!}{m^2 + 5m + 6} =$$

$$(m+3)(m+2) = m^2 + 2m + 3m + 6 =$$

$$= m^2 + 5m + 6$$

$$= \frac{(m+3)!}{(m+3)(m+2)} = \frac{\cancel{(m+3)} \cancel{(m+2)} (m+1)!}{\cancel{(m+3)} \cancel{(m+2)}}$$

$$\frac{(3m)!}{(m+1)!} = \frac{3m(3m-1) \dots (3m-2m+2) \cancel{(3m-2m+1)!}}{\cancel{(m+1)!}}$$

N 7

$$N(N-1)\dots(N-k+1) \\ n(n-1)\dots(n-(k-1)+1)$$

$$D_{n,k} - D_{n,k-1} = (n-k) D_{\substack{n \\ N}, \substack{k-1 \\ K}}$$

$$n(n-1)\dots(n-k+1) - n(n-1)\dots(n-k+1+1) = \\ = (n-k) [n(n-1)\dots(n-k+1+1)]$$

$$\boxed{n(n-1)\dots(n-k+1) - n(n-1)\dots(n-k+2)} = \\ = (n-k) [n(n-1)\dots(n-k+2)]$$

$$\boxed{n(n-1)\dots(n-k+2)(n-k+1)} - \boxed{n(n-1)\dots(n-k+2)} \\ = (n-k) [n(n-1)\dots(n-k+1)(n-k+2)]$$

$$n(n-1)\dots(n-k+2) [n-k+1-1] = (n-k) (n)(n-1)\dots$$