

Tarea: pg 15 (9, 10, 11, 15, 16)

Lomana 23

ANÁLISIS COMBINATORIO

$$④ A = \frac{15 \times 14!}{14!} + \frac{100 \times 99 \times 98!}{98!} + \frac{85 \times 84!}{84!}$$

$$A = 15 + 9900 + 85 = 10000$$

$$② (2x-3)! = 120 = 5! \Rightarrow 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$$

$$2x-3 = 5$$

$$2x = 8$$

$$x = 4$$

$$⑤ 20(n!+6) = n!(n!+1)$$

$$20n! + 120 = n! + n!$$

$$n!^2 - 19n! - 120 = 0$$

$$n! \quad -24$$

$$n! \quad 5$$

$$N! = 24 = 4!$$

$$n = 4!$$

$$④ E = 200! \rightarrow E = \frac{200 \times 199 \times 198!}{199! + 198!} = 199$$

$$⑤ \frac{(x+5)!}{(x+3)!} = 156 + \frac{(x+5)(x+4)(x+3)!}{(x+3)!} = 156$$

$$\rightarrow (x+5)(x+4) = 156 = 12 \cdot 13 \rightarrow x+4 = 12$$

$$x = 8$$

$$⑥ (x+1)! = 30(x-1)! \quad \left. \begin{array}{l} x = 5 \\ (x+1) \times (x-1)! = 30(x-1)! \end{array} \right\}$$

$$x(x-1) = 30 = 5 \cdot 6$$

$$⑦ a) \# \text{maneras} = 2 \cdot 3 \cdot 4 + 2 \cdot 4 = 32$$

$$b) \# \text{maneras} = 32 \cdot 32 = 1024$$

$$c) \# \text{maneras} = 2 \cdot 3 \cdot 4 (3 \cdot 2 \cdot 1 + 3 \cdot 2) + 2 \cdot 4 (3 \cdot 1 + 3 \cdot 3 \cdot 2)$$

$$= 288 + 168 = 456$$

$$7 = 32 \cdot 31 = 992$$

$$⑧ a) \# \text{maneras} = 7 \cdot 4 \cdot 3 = 84$$

$$b) \# \text{maneras} = 4 \cdot 5 \cdot 3 + 4 \cdot 7 \cdot 3 = 60 + 84 = 144$$

$$c) \# \text{maneras} = 4 \text{ blusas} \rightarrow 2+1=3$$

$$7 \text{ pantalones} \rightarrow 3+1=4$$

$$3 \text{ pares de zapatos} \rightarrow 1+1=2$$

$$= 3 \cdot 4 \cdot 2 = 24$$

TAREA

$$⑨ M = \frac{200!}{199!} + \frac{20!}{19!} + \frac{40!}{39!}$$

$$M = \frac{200 \cdot 199!}{199!} + \frac{20 \cdot 19 \cdot 18!}{18!} + \frac{40 \cdot 39!}{39!}$$

$$M = 200 + 380 + 40 \rightarrow M = 620$$

$$④ R = \frac{60!}{59! + 58!} \quad \left. \begin{array}{l} R = \frac{60 \cdot 59}{(1+59)} \\ R = 59 \end{array} \right\}$$

$$R = \frac{60 \cdot 59 \cdot 58!}{58! + 59 \cdot 58!}$$

$$R = 59$$

$$⑤ (x-7)! = 24 + 4!$$

$$x-7 = 4$$

$$x = 11$$

$$⑩ K = \frac{80!}{79! \cdot 78!} + \frac{14!}{13! + 12!}$$

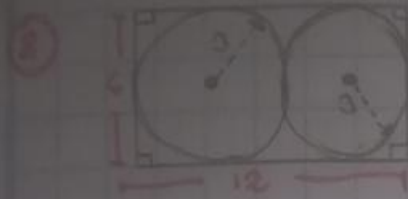
$$K = \frac{80 \cdot 79 \cdot 78!}{78! + 79 \cdot 78!} + \frac{14 \cdot 13 \cdot 12!}{12! + 13 \cdot 12!}$$

$$K = \frac{80 \cdot 79}{(1+79)} + \frac{14 \cdot 13}{(1+13)}$$

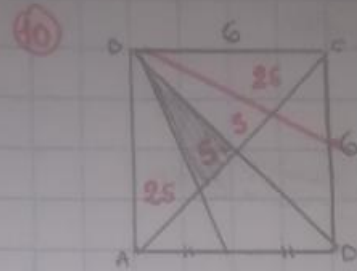
$$K = 79 + 13 = 92$$

$$⑪ Rpta: C) 24$$

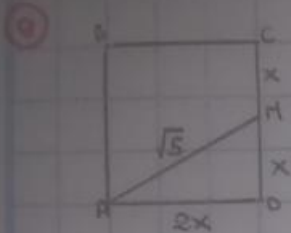
Situaciones Geométricas



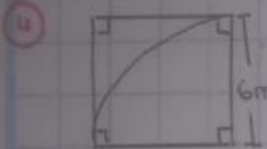
$$\begin{aligned} \text{Área} &= 6 \times 12 - 2(\pi 3^2) \\ &= 72 - 18\pi \\ &= 18(4 - \pi) \end{aligned}$$



$$? = \frac{1}{12} (6^2) = 3$$



$$\begin{aligned} \sqrt{5}^2 &= (2x)^2 + x^2 \\ x &= 1 \\ \text{Perímetro} &= 4(2) \\ &= 8 \end{aligned}$$



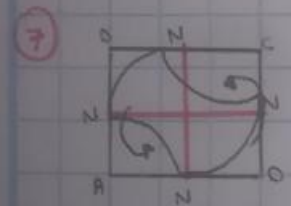
$$\begin{aligned} \text{Área} &= 6^2 - \frac{1}{4} (\pi 6^2) \\ &= 36 - 9\pi \end{aligned}$$



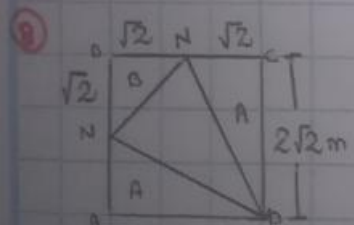
$$\text{Área} = \frac{8 \times 8}{2} = 32$$



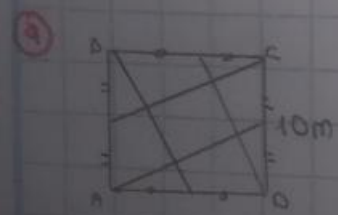
$$\text{Área} = \frac{1}{4} (12)^2 = 36$$



$$\text{Área} = \frac{1}{2} (12)^2 = 72$$



$$\begin{aligned} \text{Área} &= (2\sqrt{2})^2 - \frac{\sqrt{2} \cdot \sqrt{2}}{2} - 2 \left(\frac{\sqrt{2} \cdot 2 \cdot \sqrt{2}}{2} \right) \\ &= 8 - 5 = 3 \end{aligned}$$



$$\begin{aligned} \text{Área} &= \frac{1}{5} (10^2) \\ &= 20 \end{aligned}$$