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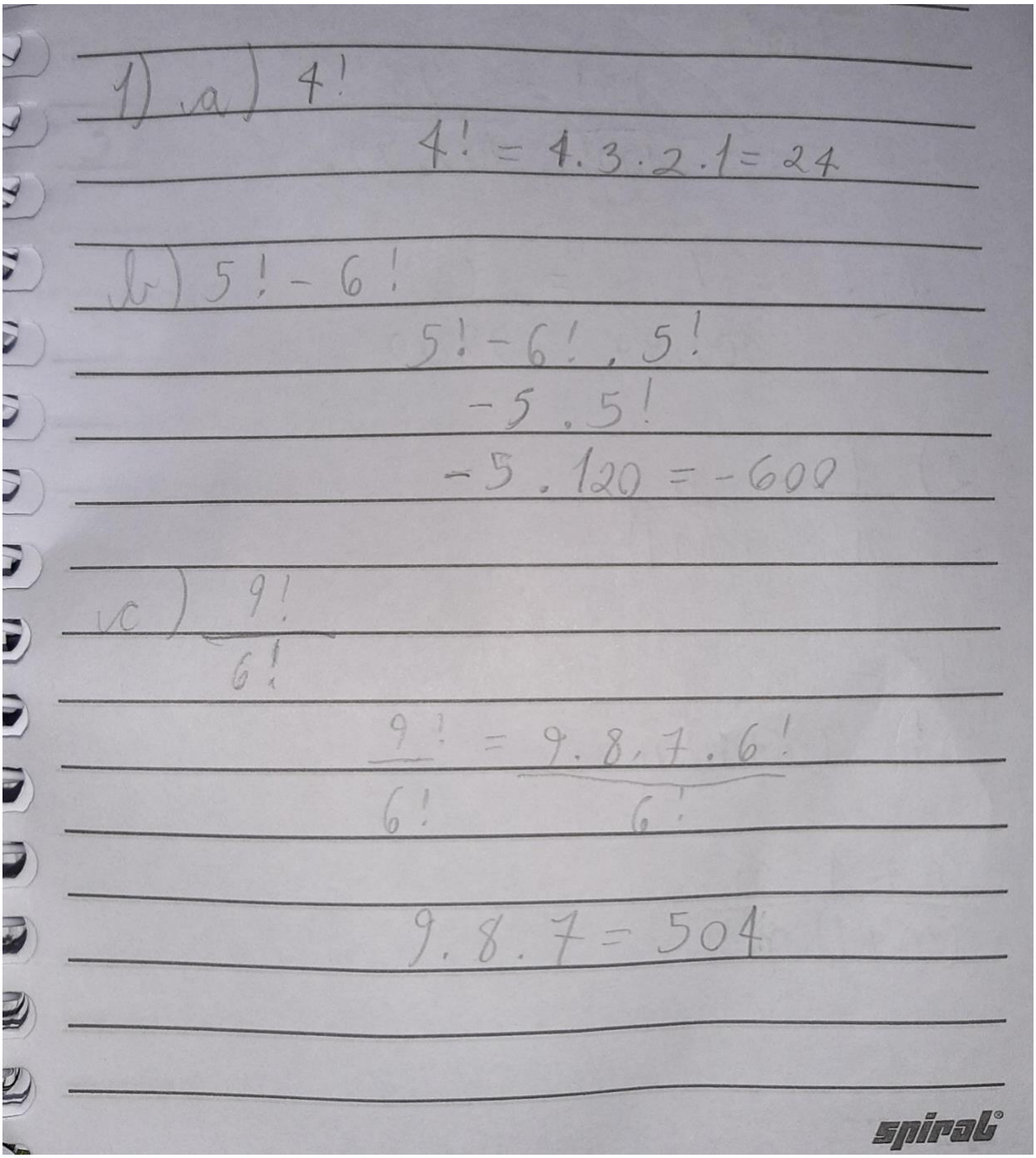
Sala: CTII 317



d) $\frac{98!}{100!}$

$98! = 98!$

$100! \quad 100 \cdot 99 \cdot 98!$

$\frac{1}{100 \cdot 99} = \frac{1}{9900}$

2) $\frac{1}{n!} - \frac{n}{(n+1)}$

$\frac{1}{n!} - \frac{n}{(n+1) \cdot n}$

$\frac{n+1-n}{(n+1) \cdot n!}$

$$\frac{1}{n!\,(n+1)} = \frac{1}{(n+1)!}$$ Letra A

3) $$\frac{(n!)^2 - (n-1)!\,n!}{(n-1)!\,n!}$$

$$\frac{n! - (n-1)!}{(n-1)!}$$

$$\frac{n\cdot(n-1)! - (n-1)!}{(n-1)!}$$

$$\frac{n-1}{n} = n-1$$ Letra A

4) $\frac{(n+2)!\,(n-2)!}{(n+1)!\,(n-1)!} = 4$

$\frac{(n+2)\cdot(n+2)!\cdot(n-2)!}{(n+1)!\cdot(n-1)\cdot(n-2)!} = 4$

$\frac{n+2}{n-1} = 4$

$n+2 = 4(n-1)$

$n+2 = 4n-4$

$n-4n = -4-2$

$-3n = 6$

$n = \frac{-3}{-6} = 2$ letra A número par

5) $\frac{(n+1)! - n!}{(n+1)!} = \frac{7}{n+1}$

$\frac{(n+1).n! - n!}{(n+1).n!} = \frac{7}{n+1}$

$\frac{n!(n+1-1)}{(n+1).n!} = \frac{7}{n+1}$

$\frac{n+1-1}{n+1} = \frac{7}{n+1}$

$\frac{n}{n+1} = \frac{7}{n+1}$

$n = 7$ letra D

6) $(n-1)![(n+1)! - n!]$

$(n-1)![(n+1-1)n!] = (n-1)!$

$(n \cdot n!)$

$[n(n-1)!][n!] = (n!)$

$(n!) \rightarrow n(n-1)!$

$(n-1)!(n \cdot n) = (n-1)! = n \cdot n!$

$(n-1)!\ n = n!$

$(n-1)! \cdot n \cdot n!$

$n! \cdot n! = (n!)^2$ letra D

7) $\dfrac{n! + (n-1)!}{(n+1)! - n!} = \dfrac{6}{25}$

$\dfrac{n \cdot (n-1)! + (n-1)!}{(n+1) \cdot n! - n!} = \dfrac{6}{25}$

spiral

$$\frac{(n-1)! \cdot (n+1)}{(n+1-1) \cdot n!} = \frac{6}{25}$$

$$\frac{(n-1)! \cdot (n+1)}{n \cdot n \cdot (n-1)} = \frac{6}{25}$$

$$\frac{n+1}{n \cdot n} = \frac{6}{25}$$

$$\frac{n+1}{n^2} = \frac{6}{25}$$

$$25(n+1) = 6n^2$$

$$25(n+1) - 6n^2 = 0$$

$$25n + 25 - 6n^2 = 0$$

$$-6n^2 + 25n + 25 = 0$$

$$6n^2 - 25n - 25 = 0$$

$$6n^2 + 5n - 30n - 25 = 0$$

$x(6x+5) - 5(6x+5) = 0$

$(6x+5) \cdot (x-5) = 0$

$6x + 5 = 0$

$x - 5 = 0$

$x = \frac{-5}{5} = x = 5$ letra C