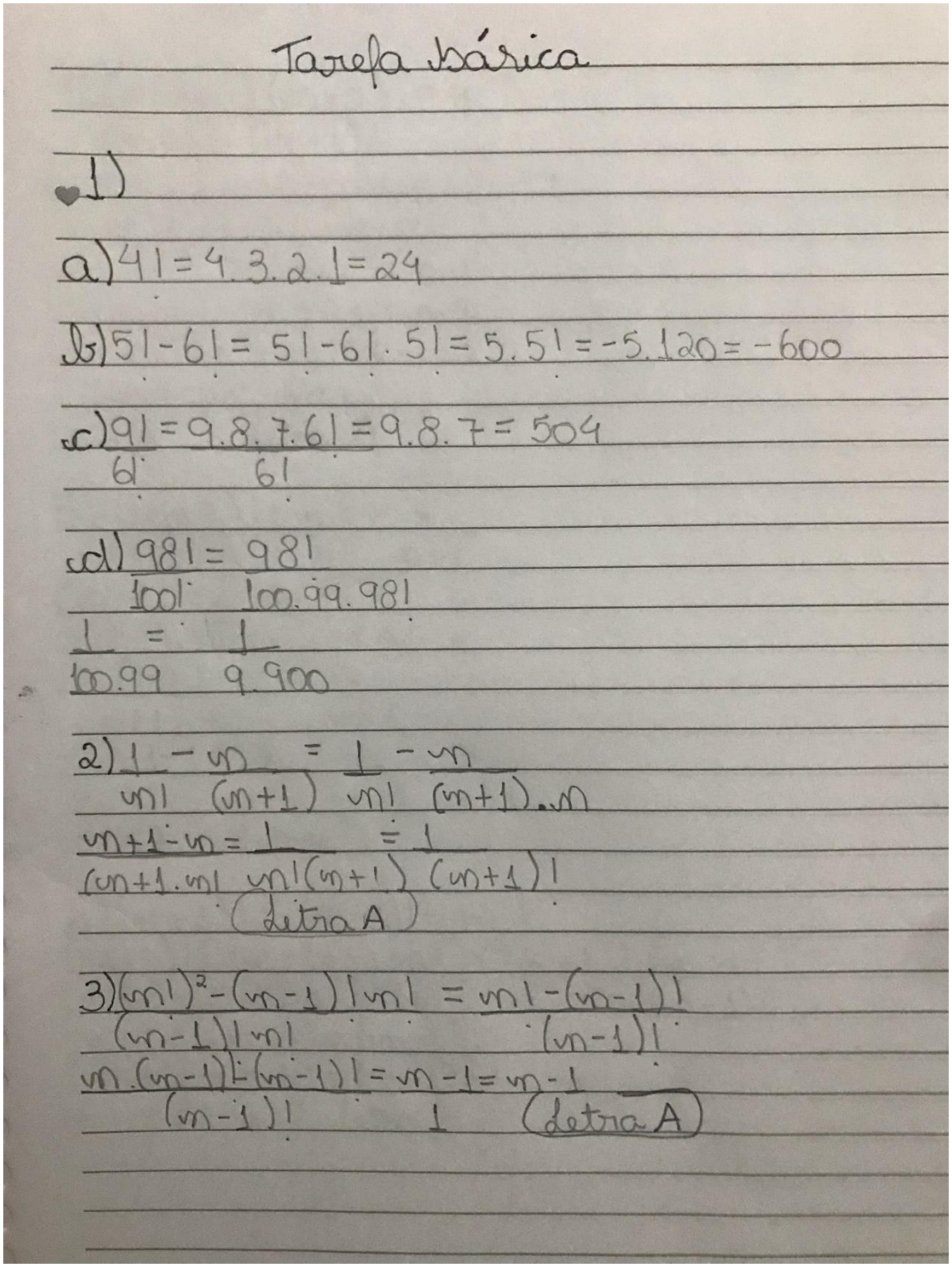
Nome: Beatriz Adolfo da Silva – CTII317



Tarefa básica

1)

a) $4! = 4.3.2.1 = 24$

b) $5! - 6! = 5! - 6.5! = 5.5! = -5.120 = -600$

c) $\frac{9!}{6!} = \frac{9.8.7.6!}{6!} = 9.8.7 = 504$

d) $\frac{98!}{100!} = \frac{98!}{100.99.98!}$

$\frac{1}{100.99} = \frac{1}{9.900}$

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

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

(letra A)

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

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

(letra A)

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

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

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

$n-1 \qquad n+2 = 4n-4$

$n-4n = -4-2$ número

$-3n = -6$ par

$n = 2$ Letra A

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

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

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

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

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

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

7) $\frac{m!(m-1)!}{(m+1)!-m!} = \frac{6}{25}$

$\frac{m.(m-1)!+(m-1)!}{(m+1).m!-m!} = \frac{6}{25}$

$\frac{(m-1)!.(m+1)}{(m+1-1).m!} = \frac{6}{25}$

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

$\frac{m+1}{m.m} = \frac{6}{25}$ $\quad 25(m+1) = 6m^2$

$\frac{m+1}{m^2} = \frac{6}{25}$ $\quad 25(m+1) - 6m^2 = 0$

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

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

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

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

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

$(6m+5).(m-5) = 0$

$6m+5=0 \quad m = -\frac{5}{6}$ $\quad m = 5$

$m-5=0$

(letra C)