01/04/2022 $a=0, b=3, c=4, d=3$

1) $\int_{c+1}^{c+2} \frac{(d+1)x}{(b+1)^2x^2+a^2}\,dx =$

$\int_{4+1}^{4+2} \frac{(3+1)x}{(3+1)^2x^2+0^2}\,dx =$

$\int_5^6 \frac{4x}{4^2x^2}\,dx =$

$\int_5^6 \frac{4x}{16x^2}\,dx$

4 $\int_5^6 \frac{x\,dx}{16x^2} =$

$\frac{4}{32}\int_5^6 \frac{32x\,dx}{16x^2} = \frac{1}{8}\ln(16x^2)\Big|_5^6 =$

$\frac{1}{8}(\ln(16(6)^2)-\ln(16(5)^2)) = \frac{1}{8}(\ln(576)-\ln(400)) =$

0.045580389

01/04/2022 $a=0, b=3, c=4, d=3$

2) $\int_{c+1}^{c+2} (x^{d+2}+b)^{a+1}\,dx =$

$\int_{4+1}^{4+2} (x^{3+2}+b)^{0+1}\,dx =$

$\int_{5}^{6} (x^5+3)^1\,dx =$

$\int_{5}^{6} x^5+3\,dx = \frac{x^6}{6}+3x\Big|_5^6 =$

$\frac{(6)^6}{6}+3(6)-\left(\frac{(5)^6}{6}+3(5)\right) = 5174.8333$

01/03/2022 $a=0, b=3, c=4, \delta=3$

3) $\int_{c+1}^{c+2} \frac{(d+1)x^2+(c+1)x+b+1}{x+a+1}\,dx =$

$\int_{4+1}^{4+2} \frac{(3+1)x^2+(4+1)x+3+1}{x+0+1}\,dx$

$\int_5^6 \frac{4x^2+5x+4}{x+1}\,dx =$

$$\begin{array}{r|l} & 4x+1 \\ \hline x+1 & 4x^2+5x+4 \\ & -4x^2-4x \\ \hline & \quad x+4 \\ & \quad -x-1 \\ \hline & \quad\quad 3 \end{array}$$

$$\int_5^6 4x+1+\frac{3}{x+1}\,dx = \frac{4x^2}{2}+x+3\ln(x+1)\Big|_5^6 =$$

$$= \frac{4(6)^2}{2}+6+3\ln(6+1)-\left(\frac{4(5)^2}{2}+5+3\ln(5+1)\right) =$$

$$= \frac{4(6)^2}{2}+6+3\ln(7)-\frac{4(5)^2}{2}-5-3\ln(6) = 23.46245204$$