Lösung zur Berechnung von komplexeren Integralen

$\int_0^1 7\cdot e^{4x+2}dx$	$\left[\frac{7}{4}\cdot e^{4x+2}\right]_0^1$ $=\frac{7}{4}\cdot e^6-\frac{7}{4}\cdot e^2\approx 706-12{,}93=$ 693,07
$\int_3^6 4\cdot e^{0{,}4x+3}dx$	$\left[\frac{4}{0{,}4}\cdot e^{0{,}4x+3}\right]_3^6$ $=10\cdot e^{5{,}4}-10\cdot e^{4{,}2}\approx 2214{,}06-666{,}86=$ 1547,2
$\int_3^6 (8\cdot e^{-0{,}5x}+16\cdot e^{0{,}5x})dx$	$\left[\frac{8}{-0{,}5}\cdot e^{-0{,}5x}+\frac{16}{0{,}5}\cdot e^{0{,}5x}\right]_3^6$ $=-16\cdot e^{-3}+32\cdot e^3-(-16\cdot e^{-1{,}5}+32\cdot e^{1{,}5})$ $=641{,}941-139{,}844=$ 502,097
$\int_{-6}^{-2}(e^{2x+10}+2x)dx$	$\left[\frac{1}{2}\cdot e^{2x+10}+x^2\right]_{-6}^{-2}$ $=\frac{1}{2}\cdot e^6+(-2)^2-(\frac{1}{2}\cdot e^{-2}+(-6)^2)$ $\approx 205{,}714-36{,}067=$ 169,647
$\int_{-2}^4 \frac{2}{3}\cdot e^{-3x+2}dx$	$\left[\frac{2}{-9}\cdot e^{-3x+2}\right]_{-2}^4$ $=-\frac{2}{9}\cdot e^{-10}-(-\frac{2}{9}\cdot e^8)\approx -0{,}00001-(-662{,}435)\approx$ 662,435
$\int_1^3 10\cdot x^{-7}dx$	$\left[\frac{10}{-6}\cdot x^{-6}\right]_1^3$ $=-\frac{5}{3}\cdot 3^{-6}-\left(-\frac{5}{3}\cdot(1)^{-6}\right)=-\frac{5}{2187}-(-\frac{5}{3})=\frac{3640}{2187}\approx$ 1,66
$\int_{-8}^{-2}\frac{6}{x^4}dx$ $=\int_{-8}^{-2}6\cdot x^{-4}dx$	$\left[\frac{6}{-3}\cdot x^{-3}\right]_{-8}^{-2}$ $=-2\cdot(-2)^{-3}-(-2\cdot(-8)^{-3})=\frac{1}{4}-(\frac{1}{256})=\frac{63}{256}\approx$ 0,25
$\int_1^4 (2\cdot e^{-6x+2}+\frac{1}{x})dx$	$\left[\frac{2}{-6}\cdot e^{-6x+2}+\ln(x)\right]_1^4$ $=-\frac{1}{3}\cdot e^{-22}+\ln(4)-(-\frac{1}{3}\cdot e^{-4}+\ln(1))\approx 1{,}39-(-0{,}0061)=$ 1,384
$\int_{-1}^2 (t^3+x^2)dx$	$\left[t^3\cdot x+\frac{1}{3}x^3\right]_{-1}^2=t^3\cdot 2+\frac{1}{3}\cdot 2^3-[t^3\cdot(-1)+\frac{1}{3}\cdot(-1)^3]$ $=2t^3+\frac{8}{3}+t^3+\frac{1}{3}=$ $3+3t^3$
$\int_1^3(0{,}5x^4+8ax^3)$ dx	$[0{,}1x^5+2ax^4]_1^3=0{,}1\cdot 3^5+2a3^4-[0{,}1\cdot 1^5+2a\cdot 1^4$ = 24,3 + 162a –[0,1 +2a] = 24,2 + 160a
$\int_1^3(0{,}5x^4+8ax^3)$ da	$[0{,}5x^4\cdot a+4x^3a^2]_1^3$ $=0{,}5x^4\cdot 3+4x^3 3^2-[0{,}5x^4\cdot 1+4x^3 1^2]$ $=1{,}5x^4+36x^3-0{,}5x^4-4x^3=$ x^4+32x^3