Examen

1 $\int_{-2}^{2} x^2\,dx \Big|_{-2}^{2} \frac{x^3}{3} = \frac{2^3}{3} - \frac{-2^3}{3}$

$= \frac{8}{3} - \frac{-8}{3} = \frac{0}{3} = 0$

2 $\int_{-3}^{3} (2x^2+3)\,dx$

$= \Big|_{-3}^{3} \frac{2x^3}{3} \Big|_{-3}^{3} 3 \cdot x$

$= \frac{2 \cdot 3^3}{3} - \frac{2 \cdot -3^3}{3} = \frac{54}{3} = \frac{-54}{3} = \frac{108}{3} = 36$

$= 3.3 \cdot 3 \cdot -3$

$= 18$

$= 36 + 18 = 54$

5 $\int_{-3}^{3} \frac{x^5}{5}\left(\frac{x^4}{4}-\frac{x^2}{2}\right)\Big|_{-3}^{3}$

$x^5\left(x^4-x^2\right)\Big|_{-3}^{3}$

$[(3)^5((3)^4-(3)^4-(3)^2)]-[(-3)^5((-3)^4-(-3)^2)]$

$[243(81-9)]-[-243(-81+9)]$

$[243(72)]-[-243(-721)]$

$17496-17196$

$=0$

5 $S_8^{12}\ 6(x)\,dx$

$S_8^{12}\ (x+8)\,dx$

$\frac{x^2}{2}+8x\Big|_8^{12}$

$\left(\frac{12}{2}\right)^2+8(12)-\frac{(8)^2}{2}+8(8)$

$168-96$

$S_8^{12}\ 6(x)\,dx=72$

6 $\int_{-2}^{6} \frac{x^2}{4} + x + 3 \, dx$

$= \int_{-2}^{6} \frac{\frac{x^3}{3}}{4} \int_{-2}^{6} \frac{x^2}{2} \int_{-2}^{6} 3 \cdot x$

$= \frac{\frac{6^3}{3}}{4} - \frac{\frac{-2^3}{3}}{4} = \frac{216}{\frac{3}{4}} - \frac{-4}{\frac{3}{4}} = \frac{72}{4} = \frac{2.6}{4}$

$= 24 = 18.65 + 16 + 24$

58.6 s