Pagina 36

2-a- $\int_1^7 5\,(f(x) - \frac{1}{2} g(x))\,dx$

$= 5\int_1^7 (f(x) - \frac{1}{2} g(x))\,dx$

$= 5\,[\int_1^7 f(x)\,dx - \frac{1}{2}\int_1^7 g(x)\,dx]$

$= 5[3 - \frac{1}{2}(\int_1^3 g(x)\,dx + \int_3^7 g(x)\,dx)]$

$= 5[3 - \frac{1}{2}(-5-3)$

$= 5[3 - \frac{1}{2}(-5-3)$

$= 5[3 - \frac{1}{2}(-8)]$

$= 5\,(3+4)$

$= 5 \cdot 7$

$= 35$

b- $\int_1^7 -2 f(x)\,dx + \int_1^7 6 g(x))\,dx$

$= -2\int_1^7 f(x)\,dx + 6\int_1^7 g(x)\,dx$

$= -2 \cdot 3 + 6(-8)$

$= -6 - 48$

$= -54$

C $\int_{1}^{7} 3(f(x)+g(x))\,dx$

$= 3\int_{1}^{7} f(x) + \int_{1}^{7} g(x)$

$= 3(3+(-8))$

$= 3(-5)$

$= 3 \cdot -5$

$= -15$

1- $f(x) = mx + b$

$b = 3$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$= \frac{4-3}{1-0}$

$= \frac{1}{1} = 1$

$f(x) = x + 3$

$\int_{-3}^{1} x+3\,dx = \int_{-3}^{1} x\,dx + \int_{-3}^{1} 3\,dx$

$= \frac{x^2}{2}\Big|_{-3}^{1} + 3x\Big|_{-3}^{1}$

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

$= \frac{1}{2} - \frac{4}{2} + 3 + 3$

$= 2$

Scribe

Pagina 37

3.

a $\int_{2}^{3} x\,dx$

$= \frac{x^2}{2}\Big|_2^3 \quad \frac{3}{2} \quad -\frac{2^2}{2} = \frac{9-4}{2} = \frac{5}{2}$

$= 2.5 \times 5$

$= 12.5$

b $\int_0^6 \sqrt[3]{x}$

$= \int_0^6 x^{1/3}\,dx = \frac{1}{3} + 1 = \frac{1}{3} + \frac{3}{3} = \frac{4}{3}$

$= \int_0^6 \frac{x^{4/3}}{\frac{4}{3}} = \int_0^6 \frac{3x^{4/3}}{4} = \frac{3\sqrt[3]{x^4}}{4}$

$= \int_0^6 \frac{3\sqrt[3]{x^4}}{4}\Big|_0^6 \quad \frac{3\sqrt[3]{6^4}}{4} - \frac{3\sqrt[3]{0^4}}{4} = \frac{3 \cdot 11}{4} - \frac{0}{4}$

$= \frac{33}{4} - \frac{0}{4} = \frac{33}{4}$

$= 8.25$

C $\int_0^3 \frac{x}{2}+1$

$=\frac{\frac{x^2}{2}}{2}$ $=\frac{x^2}{4}\Big|_0^3$ $\frac{3^2}{4}-\frac{0^2}{4}$

$=\frac{9}{4}=2.25$