Solución

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

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

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

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

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

$= 5[3+4)$

$= 5 \cdot 7$

$= 35$

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

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

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

$= -6 - 48$

$= -54$

c) $\int_1^7 3(f(x) + g(x))\,dx$

$= 3\int_1^7 f(x) + \int_1^7 g(x)$

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

$= 3 \cdot -5$

$= -15$

pag 37

3. $\int_2^3 x\,dx$

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

$= 2.5 \times 5$

$= 12.5$

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

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

$= \int_0^6 \frac{x^{4/3}}{\frac{4}{3}} = \Big|_0^6 \frac{3x^{4/3}}{4} = \frac{3\sqrt[3]{x}^4}{4}$

$= \int_0^6 \frac{3\sqrt[3]{x}^4}{4}\Big|_0^6 \quad \frac{3\sqrt[3]{6}}{4} - \frac{3\sqrt[3]{0}^4}{4} = \frac{3.11}{4} = \frac{0}{4}$

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

$= 8.25$

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

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

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

Escaneado con CamScanner