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Parcial Corto - Semana 16

1. $\int_{-4}^{4} (5x^6 + 70x^4)\,dx$

$f(x) = 5x^6 + 70x^4 = f(-x) = 5(-x)^6 + 70(-x)^4$

$5x^6 + 70x^4 = 5x^6 + 70x^4$

PAR

$2\int_{0}^{4} (5x^6 + 70x^4)\,dx$

$\frac{5x^{6+1}}{6+1} + \frac{70x^{4+1}}{4+1}$

$\frac{5x^7}{7} + \frac{70x^5}{5}$

$\left(\frac{5(4)^7}{7} + \frac{70(4)^5}{5}\right) - \left(\frac{5(0)^7}{7} + \frac{70(0)^5}{7}\right)$

$\frac{87,920}{7} + \frac{10,240}{5} - 0$

$17,702.86 + 2048$

$73,750.86\,(2)$

$= 27,501.72$

R// 27,501.72

2. $\int_{-1}^{1} (x^3 - 2x^9 + 4x^7)\,dx$

$f(x) = (x^3 - 2x^9 + 4x^7) \neq f(-x) = (-x^3 - 2x^9 + 4x^7)$

$x^3 - 2x^9 + 4x^7 = (-x)^3 - 2(-x)^9 + 4(-x)^7$

$x^3 - 2x^9 + 4x^7 \neq -x^3 + 2x^9 - 4x^7$

IMPAR

$\int_{-1}^{1} (x^3 - 2x^9 + 4x^7)\,dx = 0$

R// 0

3. $\int_{-3}^{3} (5x^2 + x)\,dx$

$f(x) = 5x^2 + x = f(-x) = 5(-x)^2 + (-x)$

$f(x) = 5x^2 + x = f(-x) = 5x^2 - x$

NINGUNA DE LAS DOS

$$\frac{5x^{2+1}}{2+1} + \frac{x^{1+1}}{1+1}$$

$$\frac{5x^3}{3} + \frac{x^2}{2} \Big|_{-3}^{3}$$

$$\left(\frac{5(3)^3}{3} + \frac{(3)^2}{2}\right) - \left(\frac{5(-3)^3}{3} + \frac{(-3)^2}{2}\right)$$

$45 + 4.5 - (-45 + 4.5)$

$49.5 + 40.5$

$= 90$

R// 90