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Nombre del trabajo: Reporte de Trabajo

Materia: Matemática Aplicada

Grado: 6

Grupo: A

Comitán de Domínguez Chiapas.

$\int v\,du = u.v - \int v\,du$

$\int e^x \cos x\,dx$

$\int 2x^2 \operatorname{sen} x\,dx$

$\int x^2 \cos 2x\,dx$

$\int x\sqrt{x-1}\,dx$

$u = x$

$du = 1$

$dv = \sqrt{x-1}$

$du = (x-1)^{3/2}$

$v = 2/3\,(x-1)^{3/2}$

$v = \frac{2}{3}\sqrt{(x-1)^3}$

$= \frac{2x}{3}\sqrt{(x-1)^3} - \frac{2}{3}\int \sqrt{(x-1)^3}\,dx$

$= \frac{2x}{3}\sqrt{(x-1)^3} - \frac{2}{3}\cdot\frac{2}{5}(x-1)^{5/2} + c$

$= \boxed{\frac{2x}{3}\sqrt{(x-1)^3} - \frac{4}{15}\sqrt{(x-1)^5} + c}$

$\int (x-1)^{3/2}$

$\int x^2 (x+3)^2\,dx$

$u = x^2$

$du = 2x$

$dv = (x+3)^2\,dx$

$v = \frac{(x+3)^3}{3}$

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

$\int \frac{1}{x}(x+2)^{1/2}\,dx$

$v = 2x \quad dv = \frac{(x+3)^3}{3}$

$du = 2 \quad v = \frac{(x+3)^4}{12}$

$-2x\frac{(x+3)^4}{12} - \frac{\int 2(x-3)^4\,dx}{12}$

$-\frac{1}{6}\int (x+3)^4\,dx$

$-\frac{1}{6}\frac{(x+5)^5}{5} + c$

$\frac{x^2(x+3)^3}{3} - \frac{2x(x+3)^4}{12} - \frac{1}{6}(x+3)^5 + c$

$\int x^2 \ln x\,dx$

$u = \ln(x)$

$du = x^2\,dx$

$du = \frac{1}{x}\,dx$

$v = \frac{x^3}{3}$

$\ln(x)\,\frac{x^3}{3} - \int \frac{x^3}{3} \cdot \frac{1}{x}\,dx$

$\ln(x)\,\frac{x^3}{3} - \int \frac{x^2}{3}\,dx$

$\ln(x)\,\frac{x^3}{3} - \frac{1}{3} \int x^2\,dx$

$\ln(x)\,\frac{x^3}{3} - \frac{1}{3} + \frac{x^3}{3}$

$\frac{\ln(x)\,x^3}{3} - \frac{x^3}{9}$

$\int e^{2x} \cos x\,dx$

$u = \cos x \quad du = e^{2x}$

$du = -\cos x \cdot \cot x \quad v = \frac{1}{2} e^{2x}$

$\frac{1}{2} e^{2x} \cos x - \frac{1}{2} \int e^{2x} (-\cos x \cdot \cot x\,dx)$

$+\frac{1}{2} \left(\frac{1}{2}\right) e^{2x} \cos x + C$

$\frac{1}{2} e^{2x} \cos x - \frac{1}{4} e^{x} \cos x + C$

$\cos x \left(\frac{1}{2} e^{2x} - \frac{1}{4} e^{x}\right) + C$

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$\int \frac{1}{2} e^{2x}(x-1)\,dx$

$\frac{1}{2} \int e^{2x} \times (x-1)\,dx$

$\frac{1}{2} \times \int x e^{2x} - e^{2x}\,dx$

$\frac{1}{2} \times \left(\int x e^{2x}\,dx - \int e^{2x}\,dx\right)$

$\frac{1}{2} \times \left(\frac{x e^{2x}}{2} - \frac{e^{2x}}{4} - \frac{e^{2x}}{2}\right)$

$\frac{xe^{2x}}{4} - \frac{3e^{2x}}{8}$

$\boxed{\frac{xe^{2x}}{4} - \frac{3e^{2x}}{8} + C}$

$\int \sqrt{x}\,(x+3)\,dx$

$\sqrt{x}\,x + 3\,dx$

$\sqrt{x}\,x + 3\sqrt{x}\,dx$

$\int x^{\frac{3}{2}}\,dx + \int 3x^{\frac{1}{2}}\,dx$

$x^{\frac{1}{2}} x + 3x^{\frac{1}{2}}\,dx$

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

$x^{\frac{3}{2}} + 3x^{\frac{1}{2}}\,dx$

$\boxed{\frac{2x^2\sqrt{x}}{5} + 2x\sqrt{x} + C}$

$\int x^{\frac{3}{2}}\,dx + \int 3x^{\frac{1}{2}}\,dx$

$\int x^2 \ln x\,dx$

$u = \ln(x)$

$du = x^2\,dx$

$du = \frac{1}{x^3}\,dx$

$v = \frac{x^3}{3}$

$\ln(x)\,\frac{x^3}{3} - \int \frac{x^3}{3} \times \frac{1}{x}\,dx$

$\ln(x)\,\frac{x^3}{3} - \int \frac{x^2}{3}\,dx$

$\ln(x)\,\frac{x^3}{3} - \frac{1}{3} \times \int x^2\,dx$

$\ln(x)\,\frac{x^3}{3} - \frac{1}{3}\,\frac{x^3}{3}$

$\frac{\ln(x)\,x^3}{3} - \frac{x^3}{9} + C$

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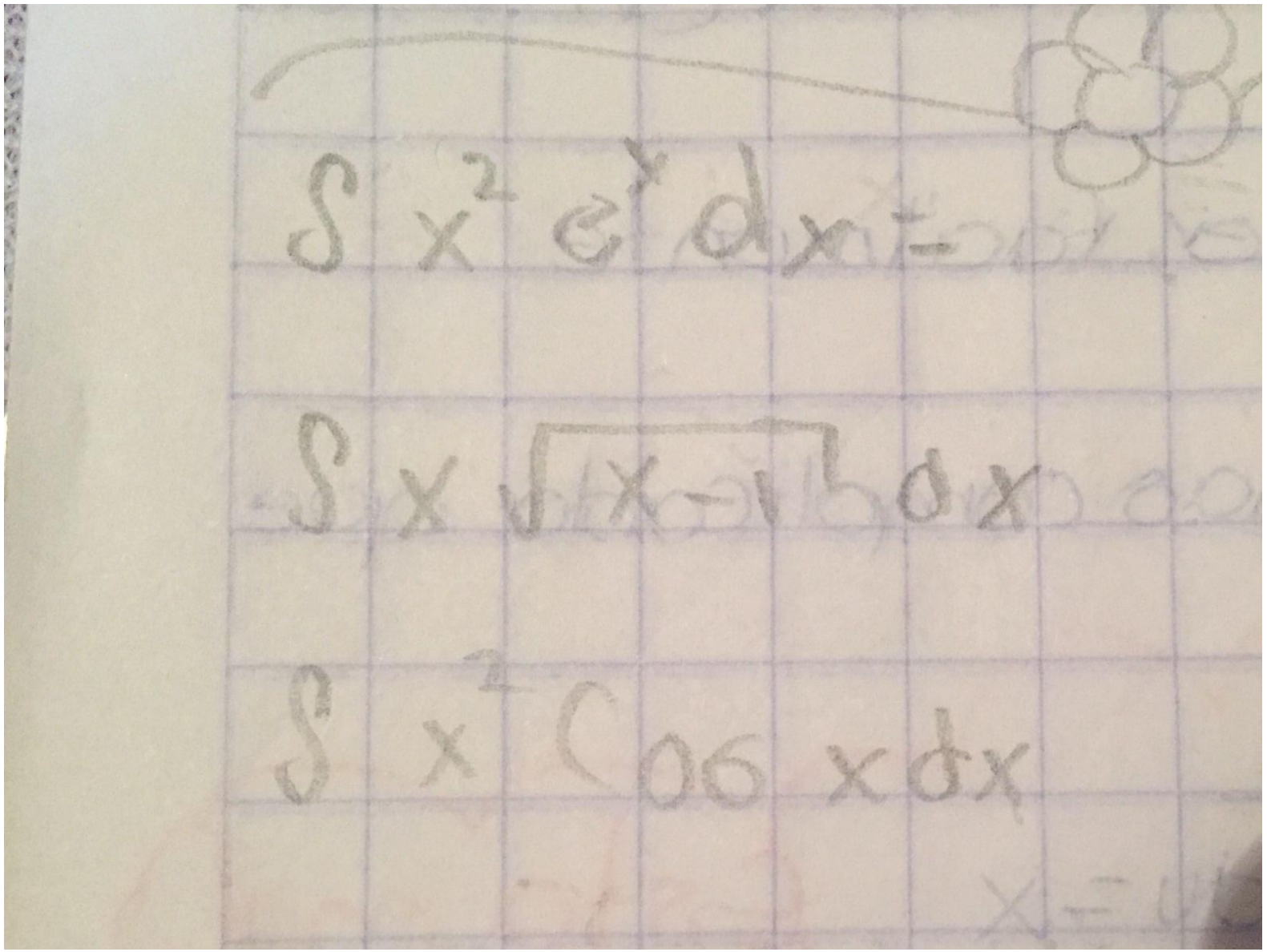
$$\int x^3 e^x \, dx =$$

$$\int x\sqrt{x-1} \, dx$$

$$\int x^2 \cos x \, dx$$



$$\int x^2 e^x \, dx$$

$$\int x \sqrt{x-1} \, dx$$

$$\int x^2 \cos 6x \, dx$$