Name : _____ Score : _____

Teacher : _____ Date : _____

Integration by Parts

Find each indefinite integral.

1) $\int x^2 \sin(10x)\, dx$

2) $\int x^5\sqrt{x^3 + 4}\, dx$

3) $\int x \bullet 11^x\, dx$

4) $\int xe^x\, dx$

5) $\int x^2 e^{2x}\, dx$

6) $\int \ln(x)\, dx$

7) $\int e^{-x} \cos(4x)\, dx$

8) $\int \ln(x + 8)\, dx$

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Integration by Parts

Find each indefinite integral.

1) $\int x^2 \sin(10x)\, dx$

$\frac{-x^2 \cos(10x)}{10} + \frac{x \sin(10x)}{50} + \frac{\cos(10x)}{500} + C$

2) $\int x^5\sqrt{x^3 + 4}\, dx$

$\frac{2}{45}(x^3 + 4)^{\frac{3}{2}}(3x^3 - 8) + C$

3) $\int x \bullet 11^x\, dx$

$\frac{11^x(x\ln(11) - 1)}{(\ln(11))^2} + C$

4) $\int xe^x\, dx$

$e^x(x - 1) + C$

5) $\int x^2 e^{2x}\, dx$

$\frac{x^2e^{2x}}{2} - \frac{2x\, e^{2x}}{4} + \frac{2e^{2x}}{8} + C$

6) $\int \ln(x)\, dx$

$x\ln(x) - x + C$

7) $\int e^{-x} \cos(4x)\, dx$

$\frac{4\sin(4x) - \cos(4x)}{17e^x} + C$

8) $\int \ln(x + 8)\, dx$

$(x + 8)\ln(x + 8) - x + C$