

Name : \_\_\_\_\_

Score : \_\_\_\_\_

Teacher : \_\_\_\_\_

Date : \_\_\_\_\_

## Integration by Parts

Find each indefinite integral.

1)  $\int x\sqrt{x+10} \, dx$

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

3)  $\int x \cdot 2^x \, dx$

4)  $\int e^x \sin(x) \, dx$

5)  $\int x \cos(x) \, dx$

6)  $\int x^2 e^{3x} \, dx$

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

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



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## Integration by Parts

Find each indefinite integral.

1)  $\int x\sqrt{x+10} \, dx$

$$\frac{2}{15}(x+10)^{\frac{3}{2}}(3x-20) + C$$

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

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

3)  $\int x \cdot 2^x \, dx$

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

4)  $\int e^x \sin(x) \, dx$

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

5)  $\int x \cos(x) \, dx$

$$x \sin(x) + \cos(x) + C$$

6)  $\int x^2 e^{3x} \, dx$

$$\frac{x^2 e^{3x}}{3} - \frac{2x e^{3x}}{9} + \frac{2e^{3x}}{27} + C$$

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

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

8)  $\int x e^x \, dx$

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

