

Name : _____

Score : _____

Teacher : _____

Date : _____

Integration by Parts

Find each indefinite integral.

1) $\int \sqrt{x} \ln(x) dx$

2) $\int x^2 \cos(4x) dx$

3) $\int \ln(x) dx$

4) $\int xe^x dx$

5) $\int x\sqrt{x+16} dx$

6) $\int \ln(x+12) dx$

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

8) $\int e^{-x} \cos(5x) dx$



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Integration by Parts

Find each indefinite integral.

1) $\int \sqrt{x} \ln(x) dx$

$$\frac{2}{9} x^{\frac{3}{2}} (3 \ln(x) - 2) + C$$

2) $\int x^2 \cos(4x) dx$

$$\frac{x^2 \sin(4x)}{4} + \frac{2x \cos(4x)}{16} - \frac{2 \sin(4x)}{64} + C$$

3) $\int \ln(x) dx$

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

4) $\int x e^x dx$

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

5) $\int x \sqrt{x + 16} dx$

$$\frac{2}{15} (x + 16)^{\frac{3}{2}} (3x - 32) + C$$

6) $\int \ln(x + 12) dx$

$$(x + 12) \ln(x + 12) - x + C$$

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

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

8) $\int e^{-x} \cos(5x) dx$

$$\frac{5 \sin(5x) - \cos(5x)}{26e^x} + C$$

