 Name____

Calculus Practice: Techniques for Finding Antiderivatives 21b

Evaluate each indefinite integral.

1) $\int \cos \ln x \, dx$

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

3) $\int \sin x \cdot e^x \, dx$

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

5) $\int \sin \ln x \, dx$

6) $\int \cos x \cdot e^{-x} \, dx$

7) $\int \sin x \cdot e^{-x} \, dx$

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Calculus Practice: Techniques for Finding Antiderivatives 21b

Evaluate each indefinite integral.

1) $\int \cos \ln x \, dx$

Use: $u = \cos \ln x$, $dv = dx$

$$\int \cos \ln x \, dx = \frac{x\cos \ln x + x\sin \ln x}{2} + C$$

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

Use: $u = (\ln x)^2$, $dv = dx$

$$\int (\ln x)^2 \, dx = x \cdot (\ln x)^2 - 2x\ln x + 2x + C$$

3) $\int \sin x \cdot e^x \, dx$

Use: $u = \sin x$, $dv = e^x \, dx$

$$\int \sin x \cdot e^x \, dx = \frac{e^x\sin x - e^x\cos x}{2} + C$$

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

Use: $u = e^x$, $dv = \cos x \, dx$

$$\int e^x \cos x \, dx = \frac{e^x \sin x + e^x \cos x}{2} + C$$

5) $\int \sin \ln x \, dx$

Use: $u = \sin \ln x$, $dv = dx$

$$\int \sin \ln x \, dx = \frac{x \sin \ln x - x \cos \ln x}{2} + C$$

6) $\int \cos x \cdot e^{-x} \, dx$

Use: $u = e^{-x}$, $dv = \cos x \, dx$

$$\int \cos x \cdot e^{-x} \, dx = \frac{\sin x - \cos x}{2e^x} + C$$

7) $\int \sin x \cdot e^{-x} \, dx$

Use: $u = e^{-x}$, $dv = \sin x \, dx$

$$\int \sin x \cdot e^{-x} \, dx = \frac{-\cos x - \sin x}{2e^x} + C$$