

Evaluate the following integrals using integration by parts, and *check your answers!!*

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|--------------------------|--------------------------|-----------------------------|
| 1. $\int \arctan(x) dx$ | 3. $\int (\ln(x))^2 dx$ | 5. $\int x^2 \arcsin(x) dx$ |
| 2. $\int e^x \cos(x) dx$ | 4. $\int x^3 e^{x^2} dx$ | 6. $\int \sin(\ln(x)) dx$ |

Evaluate the following integrals, and check your answers.

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|---|----------------------------|----------------------------|
| 1. $\int_1^{e^3} \frac{\ln(x)}{x} dx$ | 3. $\int x^3 \cos(x^4) dx$ | 5. $\int \cos(x^{1/3}) dx$ |
| 2. $\int_1^{e^3} \frac{\ln(x)}{x^2} dx$ | 4. $\int x^3 \cos(x^2) dx$ | 6. $\int \sec(x) dx$ |

Hint: For #6, consider multiplying by 1 in the form $\frac{\sec(x) + \tan(x)}{\sec(x) + \tan(x)}$.