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# Common Calculus Mistakes

## Indefinite Integral

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### The Goal

Find

$$\int e^x dx$$

### The Mistake

Find the mistake:

$$\int e^x dx = \frac{1}{x+1} e^{x+1} + C$$

Need a hint? Look carefully at the red part:

$$\int e^x dx = \frac{1}{x+1} e^{x+1} + C$$

### The Correction

$$\int e^x dx = e^x + C$$

### An Explanation

An exponential function is *not* a power function, so the integral formula for a power function does *not* apply to finding the integral in this example.