

## Reduction Formulas

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### Learning Objectives

- Use a table with reduction formulas to evaluate an integral
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*Use a table with reduction formulas to evaluate an integral*

1. Use reduction formulas to evaluate each integral. (You may need to apply the reduction formula more than once, or complete the integration with another formula from the integration tables.)

a.  $\int x^3 e^{-2x} dx$

b.  $\int x^2 \sqrt{4 + 3x} dx$



## ANSWER KEY

1. a.  $-\frac{1}{2}x^3e^{-2x} - \frac{3}{4}x^2e^{-2x} - \frac{3}{4}xe^{-2x} - \frac{3}{8}e^{-2x} + C$ ; b.  $\frac{2}{21}x^2(4+3x)^{3/2} - \frac{32}{315}x(4+3x)^{3/2} + \frac{256}{2835}(4+3x)^{3/2} + C$