

Name: SOLUTIONS	A#:	Section:
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1. Use an integrating factor to solve the equation $y' - 2ty = 4t$.

Integrating factor $A(t) = e^{\int -2t dt} = e^{-t^2}$

Then
$$\begin{aligned} y(t) &= \frac{1}{e^{-t^2}} \int e^{-t^2} (4t) dt \\ &= e^{t^2} (-2e^{-t^2} + C) \\ &= \boxed{-2 + Ce^{t^2}} \end{aligned}$$