**Math 10A with Professor Stankova**
**Worksheet, Discussion #26; Wednesday, 10/25/2017**
**GSI name: Roy Zhao**

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# Review

## Example

1. Find the solution to $\frac{dx}{dy} = e^{x-y}$ with $x(0) = 0$.

## Problems

2. True False In order to justify integration by parts, you need the product rule.
3. Calculate $\int_0^1 e^{-x} dx$. State the reasoning behind each step.
4. Write an antiderivative of $e^{x^2}$. State any reasoning why.
5. Find an antiderivative of $f'(x)$. Is it the only one?
6. If $y_1(x)$ and $y_2(x)$ are solutions do $\frac{dy}{dx} = 5y$, show that $y_1 + y_2$ is a solution and explain all steps.