Name: $\qquad$
Section:

1. Find the general solution to the differential equation

$$
y^{\prime \prime}-3 y^{\prime}+2 y=t e^{t}
$$

Use the method of undetermined coefficients as part of your solution.
2. Use the method of variation of parameters to find a solution to

$$
y^{\prime \prime}+y=\sec (t)
$$

on $(-\pi, \pi)$. (An integral that might be helpful to you is $\int \tan t d t=\ln (\cos t)$ whenever $t \in(-\pi, \pi)$.

