I. Section 2.2: 2, 5, 11, 14, 18, 32.

II. Section 2.3: 5, 14, 23.

III. Use Theorem 2.4.1 to find the interval where the solution to each of the following must be continuous.
1. $y' + t^2y = \sin t$ with $y(0) = 7$.
2. $(t - 4)y' + (t + 1)^2y = \sin t$ with $y(0) = 7$.
3. $y' + t^2y = \tan t$ with $y(0) = 7$.

IV. Use Theorem 2.4.2 and sketch the regions of the $ty$-plane where the solution to each of the following must be unique.
1. $y' = \frac{at + by}{ct + dy}$
2. $y' = \cot(\pi ty)$. 