

## Problem 7

The field mouse population in Example 1 satisfies the differential equation

$$dp/dt = 0.5p - 450.$$

- (a) Find the time at which the population becomes extinct if  $p(0) = 850$ .
- (b) Find the time of extinction if  $p(0) = p_0$ , where  $0 < p_0 < 900$ .
- (c) Find the initial population  $p_0$  if the population is to become extinct in 1 year.