

Problem 8

In each of Problems 1 through 12:

- (a) Draw a direction field for the given differential equation.
- (b) Based on an inspection of the direction field, describe how solutions behave for large t .
- (c) Find the general solution of the given differential equation, and use it to determine how solutions behave as $t \rightarrow \infty$.

$$(1 + t^2)y' + 4ty = (1 + t^2)^{-2}$$