

Math 2080: Differential Equations

Worksheet 2.4: Solving 1st order inhomogeneous ODEs

NAME:

1. Carry out the first few steps (i.e., until you have to integrate) of the integrating factor method with the following ODEs:

(a) $y' - 2y = 1$

(b) $2y' = 4y + 2.$

(c) $y' + \frac{1}{t}y = 1$

(d) $y' - \frac{1}{t}y = 1$

(e) $y' - 5t^4y = t^3$

2. Find the *general solution* of the differential equation $y' = y + e^t$, by the *integrating factor* method.
3. Find the *general solution* of the differential equation $y' = y + e^t$, by the *variation of parameters* method.