

Dr. Mervin Lind Equations Homework Questions

Note Title

1/1/19/2009

① Which of the following first-order DE's are linear, which are separable?

a) $y' + x^2 y = e^x$

s) $y' + 4x y^2 = 0$

c) $y' + \sin(x)y + x^3 = 0$

d) $(4y - \cos(y))y' = 3x^2$

e) $y' = 2 - 5y$

f) $3 \tan(y) - y' \sec(x) = 0$

② Solve the DE $y' = xy$ if (a) $y(0) = 1$ or (b) $y(0) = 1/2$

③ Solve the DE $xy' + y = x$ if (a) $y(1) = 2$ or (b) $y(-1) = 2$

④ Solve the following DE's

a) $y' + 3y = e^{-2x}$

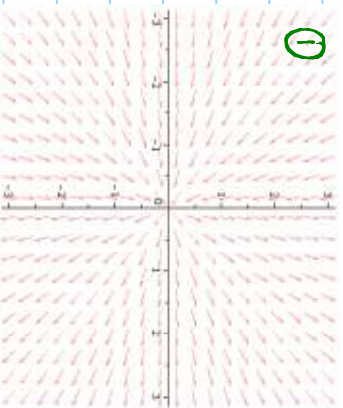
5) $y' = -xy$

c) $y' + 2xy = x$

d) $y' - (1+x)(1+y^2) = 0$

e) $(x^2+1)y' + xy = 0$

⑤ Which of the following field plots belongs to what DE?



a) $y' = \frac{x}{y}$

b) $y' = -xy$

c) $y' = (1+y^2)x^2$