KFUPM/ Dept. of Mathematics & Statistics ID #: Serial #:
MATH 202-11/ Quiz 1 Name:

1. Find the general solution of the DE: $x^2y' + (x^2 + 2x)y = e^x$

2. Classify each of the following DEs as separable, exact, linear, homogeneous, or Bernoulli. For homogeneous and for Bernoulli DEs give an appropriate substitution. (Do not solve any of the DEs)

(a) $(x - y)\,dx + \sqrt{x^2 + y^2}dy = 0$

(b) $(x + 1)\,\dfrac{dy}{dx} = 5 - y$

(c) $\left(x^2 + \dfrac{2y}{x}\right)dx + (\ln x^2 - 3)\,dy = 0$

(d) $2xyy' + y^2 = 3x^4$