

Name: _____ ID #: _____ Serial #: _____

1. Classify each of the following DEs as separable, linear, homogeneous, or Bernoulli. Do not solve.

(a) $2x^2y + x^3y' = 1$

(b) $6x^3y + 2x^2y^2 + \left(3xy^3 - \frac{x^5}{y}\right)y' = 0$

(c) $9x^2y^2 + x^{3/2}y' = y^2$

(d) $xyy' = 4y^2 - 8x^3y^{3/2}$

2. Show that the DE $(3 \cos x + 2y^2) dx + (4xy + 6y^2) dy = 0$ is exact and then solve it.