

Name: _____ ID #: _____ Serial #: _____

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

(a) $5xy + x^4y' = 2$

(b) $6x^3y + 2y^4 + \left(x^2y^2 + \frac{8y^5}{x}\right)y' = 0$

(c) $2x^3y + x^{5/2}y' = y$

(d) $xyy' = 6y^2 + 12x^4y^{2/3}$

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