1. (1 point) Select the following which are separable equations.

- A. $y'y = 2$
- B. $\frac{dy}{dx} = e^{xy}$
- C. $y' = xe^y + ye^x$
- D. $\frac{dy}{dx} = x\cos(y) + x$
- E. $\frac{dy}{dx} = e^{e+2y}$
- F. $y' = 2y$
- G. $x\frac{dy}{dx} - y = 0$
- H. $\frac{dy}{dx} + \sin(xy) = 0$
- I. $y' = x + y$
- J. None of the above

2. (1 point) Find the general solution of the differential equation

$$y' = e^{5x} - 3x.$$

(Don't forget +C.)

$y =$ _____ help (formulas)

3. (1 point) Using separation of variables, solve the differential equation,

$$(10 + x^8)\frac{dy}{dx} = \frac{x^7}{y}.$$

Use **C** to represent the arbitrary constant.

$y^2 =$ _____

4. (1 point) Evaluate the indefinite integral using substitution. (Use C for the constant of integration.)

$$\int \frac{x^2}{\sqrt{x^3 - 1}}\, dx = \_\_\_\_\_$$

5. (1 point) Evaluate the following indefinite integral.

$\int xe^{2x}\, dx =$ _____ $+C$.

6. (1 point) Find the general solution of the differential equation

$$y' = e^{6x} - 2x.$$

(Don't forget +C.)

$y =$ _____ help (formulas)