## Assignment Math45-Module-04-Exercises due 09/17/2020 at 11:59pm PDT

**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  ${\bf C}$  to represent the arbitrary constant.

$$y^2 =$$
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**4.** (1 point) Evaluate the indefinite integral using substitution. (Use C for the constant of integration.)

$$\int \frac{x^2}{\sqrt{x^3 - 1}} dx = \underline{\qquad}$$

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

$$\int xe^{2x} dx = \underline{\qquad} +C.$$

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

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

(Don't forget +C.)

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y =\_\_\_\_\_help (formulas)

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