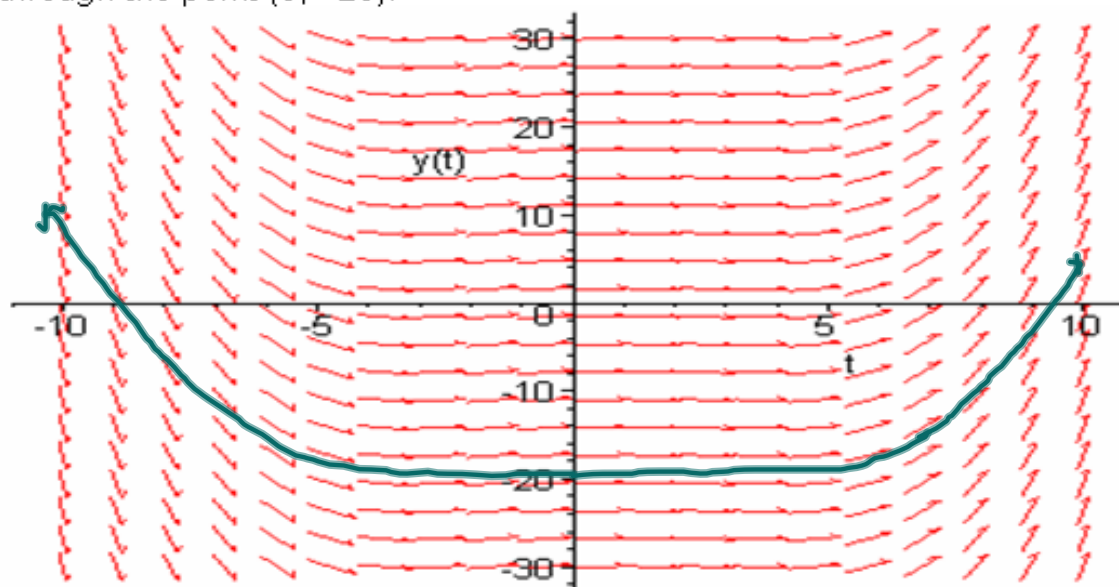


(20pts) NAME (printed neatly): _____

(10pts) Section Number (circle correct section): 502 (10:20am) 503 (11:30am) 506 (4:10pm)

Quiz Grade: _____

1. (20pts) On the given direction field draw the particular solution that goes through the point $(0, -20)$.



2. (10pts) What model does the above direction field represent?
- a. Logistic
 - b. Cubic
 - c. Sine
 - d. Quadratic**
 - e. Logarithmic
 - f. Linear
 - g. Exponential

3. (20pts) Find a particular solution to $\frac{dy}{dx} = 4x$ such that if $x = 3$, then $y = 10$.

$$\frac{dy}{dx} = 4x$$

$$dy = 4x dx$$

$$\int dy = \int 4x dx$$

$$y = 2x^2 + C$$

$$10 = 2(3^2) + C$$

$$C = -8$$

$$\therefore y = 2x^2 - 8$$

4. (20pts) Write a general solution to $\frac{dy}{dx} = \frac{-2}{7x}$.

$$\frac{dy}{dx} = \frac{-2}{7} x^{-1}$$

$$dy = \frac{-2}{7} x^{-1} dx$$

$$\int dy = \frac{-2}{7} \int x^{-1} dx$$

$$\therefore y = \frac{-2}{7} \ln|x| + C$$