

**Math 152**

March 14, 2011

Quiz #6 D (last one!)

Name \_\_\_\_\_

please print

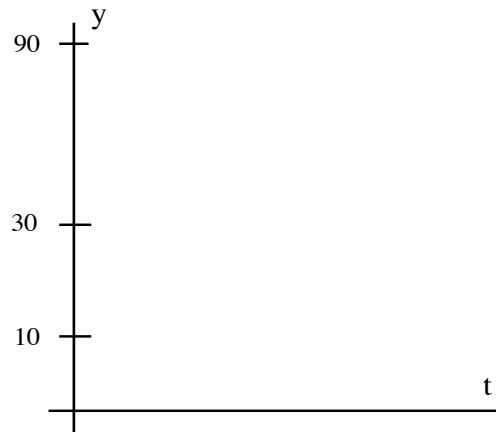
**Show your work****Good Luck!**

$$1. \quad \frac{dy}{dt} = y(20 - y) \left( 1 - \frac{y}{65} \right)$$

(a) List the constant solutions:

(b) Sketch the constant solutions and the solutions with initial conditions

$$y(0) = 10, \quad y(0) = 90, \quad \text{and} \quad y(2) = 30.$$



(2)(4)

$$2. \quad \text{Solve } \frac{dC}{dt} = C - 65 \quad \text{with } C(0) = 85. \quad (\text{Show your work.}) \quad C(t) = \underline{\hspace{4cm}}$$

(3)

$$3. \quad (a) \quad D(\arcsin(2x)) = \underline{\hspace{4cm}} \quad (b) \quad D\left(\arctan\left(1 + \frac{3}{x}\right)\right) = \underline{\hspace{4cm}}$$

(2)(3)

$$4. \quad \int \frac{10}{1 + 4x^2} dx = \underline{\hspace{4cm}} \quad (b) \quad \int \frac{12}{\sqrt{1 - (3x + 1)^2}} dx = \underline{\hspace{4cm}}$$

(3)(3)

5. How old was Evariste Galois when he died? \_\_\_\_\_ (1)