EXERCISES 12.1 (submit by 03.07.2015)

1. Find differential equations satisfied by the following families of curves.

    (a) $y = e^{Cx}$

    (b) $x^2 + Cy^2 = 2y$

    (c) $y = (x - C)^3$

    (d) $y = \sin(x + C)$

    (e) $x = ay^2 + by + c.$

2. Solve the logistic equation $y' = y(1 - y)$ for $t > 0$ and $y(0) > 0$.