Circle True or False. (1 point for correct answer, 0 if incorrect)

1. True   False   The slope field of $\dfrac{dy}{dt} = \sin(y)$ will be the same if we shift it left or right.

2. True   False   It is impossible to have two unstable equilibria and no other equilibria.

Show your work and justify your answers. Please circle or box your final answer.

3. (10 points) (a) (4 points) Use Euler's method to estimate $y(3)$ with a step size of $h = 1$ if $\dfrac{dy}{dx} = 2x - y^2$ and $y(1) = 1$.

    (b) (5 points) Classify the equilibria of the differential equation $P' = P(7 - P) - 10$.

    (c) (1 point) What will P be in the future if initially $P(0) = 3$?