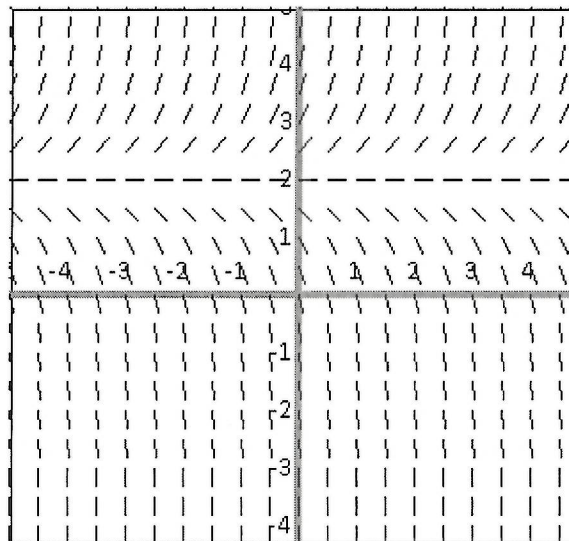


Math 266 Summer 2016 Quiz 1

1) Which of the following differential equations corresponds to the direction field below?

- (A) $y' = 2y - 4$
- (B) $y' = 2y + 4$
- (C) $y' = 2y(y - 1)$



2) Solve the following initial value problem.

$$\frac{dy}{dt} = -2y + 4, y(0) = 0$$

$$\frac{dy}{dt} = -2(y-2)$$

$$\frac{dy}{y-2} = -2 dt$$

$$\ln |y-2| = -2t + C$$

$$|y-2| = Ce^{-2t}$$

$$y-2 = Ce^{-2t}$$

$$0-2 = Ce^0 \Rightarrow C = -2$$

$$\Rightarrow y(t) = -2e^{-2t} + 2$$

High: 20
Low: 10
Average: 18