

Section 8.1: Basic Ideas of Differential Equations

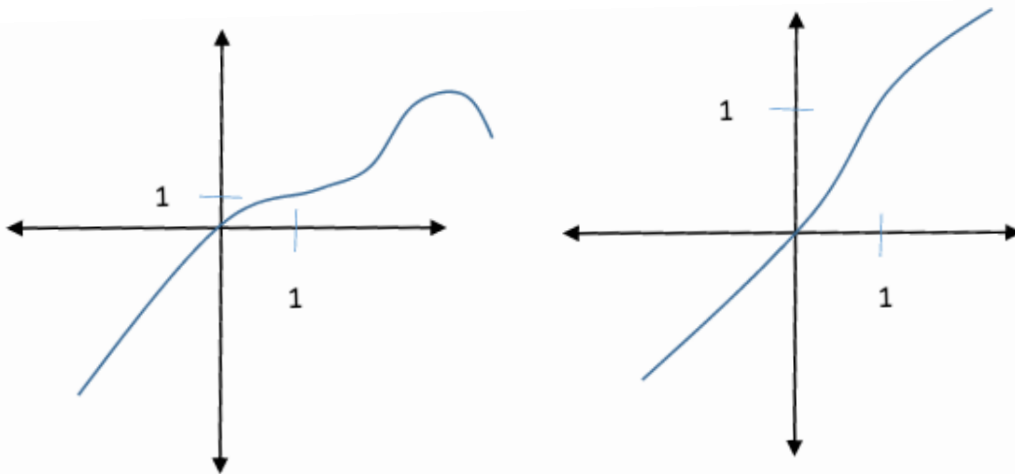
Group work:

Problem 1 Which of the following is a solution to the differential equation

$$y'' + 9y = 0?$$

- (a) $y = e^{3t} + e^{-3t}$
- (b) $y = C(t^2 + t)$
- (c) $y = \sin(3t) + 6$
- (d) $y = 5 \cos(3t) - 7 \sin(3t)$
- (e) $y = A \cos(3t) + B \sin(3t)$ (where A and B are real numbers.)

Problem 2 Explain why the functions with the given graphs cannot be solutions of the differential equation $y' = e^x(y - 1)^2$.



Learning outcomes: