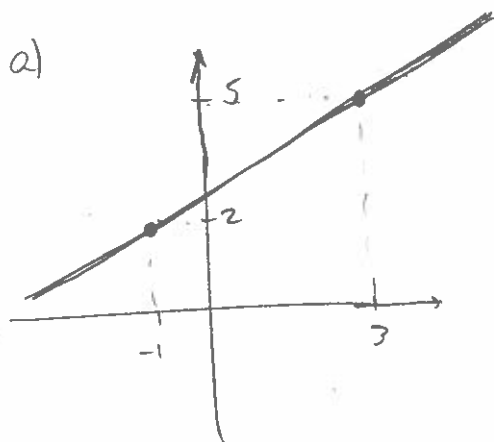


# SOLUTION TO HW 1

#1



b) Slope =  $m = \frac{\Delta y}{\Delta x} = \frac{5-2}{3-(-1)} = \frac{3}{4}$

c)  $y - y_0 = m(x - x_0)$

$$y - 2 = \frac{3}{4}(x - (-1)) = \frac{3x}{4} + \frac{3}{4}$$

$$y = \frac{3x}{4} + \frac{11}{4}$$

#2

$$(x^2 - 1)(3x + 1)e^{-7x} = 0 \iff x^2 - 1 = 0 \text{ or } 3x + 1 = 0 \text{ or } e^{-7x} = 0$$

- $x^2 - 1 = 0 \iff x = \pm 1$
- $3x + 1 = 0 \iff x = -\frac{1}{3}$
- $e^{-7x} = 0$  does not have any solutions

A. The real numbers  $x$  that solve the given equation are  $x = -1$ ,  $x = -\frac{1}{3}$  and  $x = 1$ .