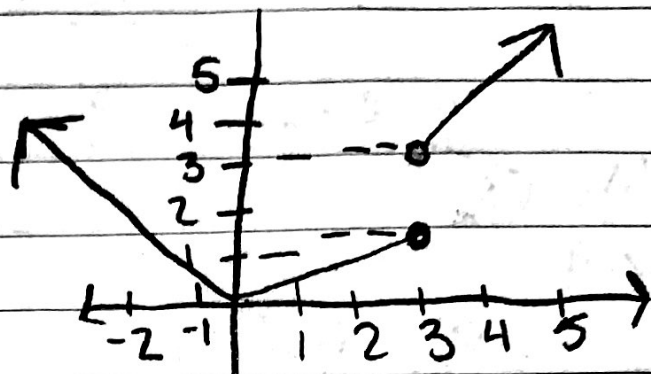


# Attendance check-in #3

Markay Mo

## Exercise 1

a) What is  $\lim_{x \rightarrow 3^-} g(x) = 3$



b) What is  $\lim_{x \rightarrow 3^+} g(x) = 1$

b) b

## Exercise 2

$$N(p) = 80 - 5p^2 \quad / \quad \lim_{h \rightarrow 0} \frac{f(a+h) - f(a)}{h}$$

$$\begin{aligned} \text{a) } 1) \quad N(2.5+h) &= 80 - 5(2.5+h)^2 \\ &= 80 - 5(6.25 + 5h + h^2) = 80 - 31.25 - 25h - 5h^2 \\ &= 48.75 - 25h - 5h^2 \rightarrow N(2.5) = 80 - 5(2.5)^2 = 48.75 \end{aligned}$$

$$2) \quad N(2.5+h) - N(2.5) = 48.75 - 25h - 5h^2 - 48.75$$

$$3) \quad \frac{N(2.5+h) - N(2.5)}{h} = \frac{-25h - 5h^2}{h} = -25 - 5h$$

$$4) \quad \lim_{h \rightarrow 0} (-25 - 5h) = -25 \text{ boxes}$$

→ Increase from  $\uparrow 2.5$  has  <sup>$\checkmark$</sup>  demand drop  
of ~~11.25~~ 25 bates

Exercise 3  $\downarrow \tilde{y} = f(x)$  at  $\downarrow \tilde{x} = a$  /  $y - f(a) = f'(a)(x - a)$

$f(x) = \sqrt{x}$   
 $x = 9$

a)  $a = 9$   
 $f(a) = f(9) = \sqrt{9} = 3$   
 $f'(9) = \frac{1}{2\sqrt{9}} = \frac{1}{6}$

$f(x) = \sqrt{x} = \sqrt{9}$   
 $f'(x) = \frac{1}{2\sqrt{x}} = \frac{1}{6}$

$y - 3 = \frac{1}{6}(x - 9)$   
 $\hookrightarrow f'(a) = 0$

undefined  
 $= \rightarrow \text{DNE}$

$\frac{1}{2\sqrt{x}} = 0$   
 $\hookrightarrow \left( \frac{\sqrt{x}}{2x} \right)$