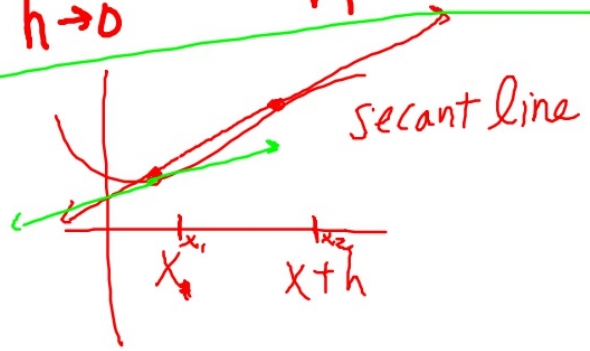
p. 103 #9-22 (due End of Fri.)

$$\lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

Slope of a line tangent to a curve.




rise / run

$$\frac{y_2 - y_1}{x_2 - x_1} \Rightarrow \frac{f(x_2) - f(x_1)}{x_2 - x_1}$$

$$\frac{\Delta y}{\Delta x} \qquad \frac{f(x+h) - f(x)}{x+h - x}$$

$$\frac{f(x+h) - f(x)}{h}$$

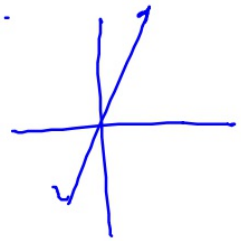
**p. 103**

14. $f(x) = 7x - 3$

$f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$

"f prime"

the derivative



$\lim_{h \to 0} \frac{7(x+h) - 3 - (7x - 3)}{h}$

$\lim_{h \to 0} \frac{\cancel{7x} + 7h - \cancel{3} - \cancel{7x} + \cancel{3}}{h}$

$\lim_{h \to 0} \frac{7h}{h} \Rightarrow \lim_{h \to 0} 7 = 7$

7

Secant Wksht:

1.) (1,1) (3,7)

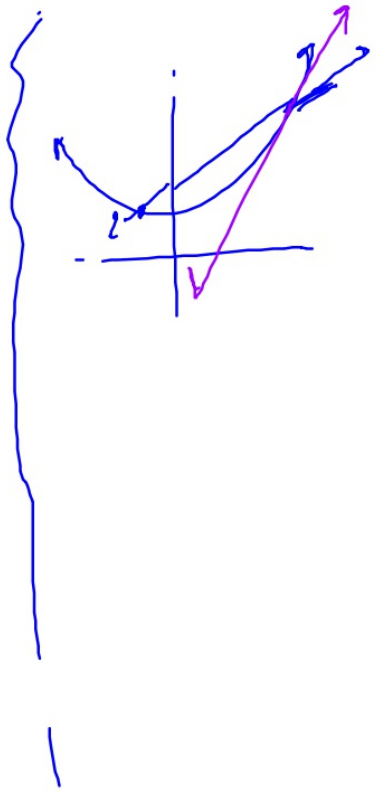
slope: $\frac{7-1}{3-1} = \frac{6}{2} = 3$

pt: use (1,1) or (3,7)

$y - y_1 = m(x - x_1)$

$y - 1 = 3(x - 1)$

$\boxed{y = 3x - 2}$



**Assessment Problems worked out kind of**

- $\lim_{x \to c^-} f(x) = f(c) = \lim_{x \to c^+} f(x)$

Fig-3. $x = 1$ Rem. Disc b/c $\lim_{x \to 1} p(x) = \frac{1}{3}$

$x = -2$ Inf. Disc/V.A. $\lim_{x \to -2^-} \frac{1}{x+2} = -\infty$