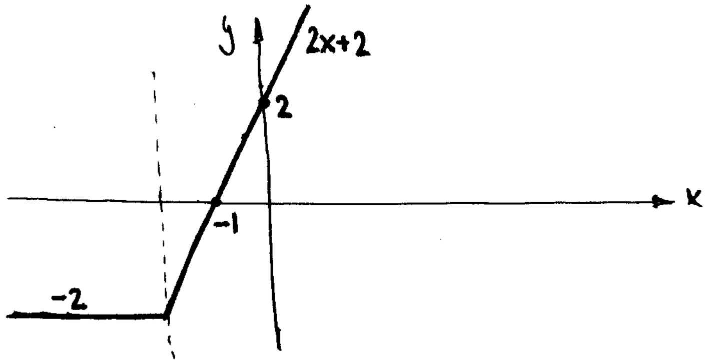
b) $$y = |x+2| + x = \begin{cases} x+2+x = 2x+2 & \text{si } x+2>0 \Rightarrow \text{si } x>-2 \\ -x-2+x = -2 & \text{si } x+2\leq 0 \Rightarrow \text{si } x\leq -2 \end{cases}$$



$y = 2x+2$

x	y
0	2
-1	0

PREGUNTA 4

a) $$f'(3) = \lim_{h\to 0} \frac{f(3+h)-f(3)}{h} = \lim_{h\to 0} \frac{\frac{2(3+h)-3}{5} - \frac{3}{5}}{h} = \lim_{h\to 0} \frac{\cancel{6}+2h-\cancel{3}-\cancel{3}}{5h} = \left[\frac{0}{0}\right] =$$

$$= \lim_{h\to 0} \frac{2\cancel{h}}{5\cancel{h}} = \frac{2}{5}$$

b) $$f'(1) = \lim_{h\to 0} \frac{f(1+h)-f(1)}{h} = \lim_{h\to 0} \frac{(2(1+h)+1)^2 - 9}{h} = \lim_{h\to 0} \frac{(3+2h)^2-9}{h} =$$

$$= \lim_{h\to 0} \frac{\cancel{9}+4h^2+12h-\cancel{9}}{h} = \left[\frac{0}{0}\right] = \lim_{h\to 0} \frac{\cancel{h}[4h+12]}{\cancel{h}} = \lim_{h\to 0}(4h+12) = 12$$

PREGUNTA 5 :

Hallamos la función derivada:

$$f'(x) = \lim_{h\to 0} \frac{f(x+h)-f(x)}{h} = \lim_{h\to 0} \frac{(x+h)^2-5(x+h)+1-(x^2-5x+1)}{h} =$$

$$= \lim_{h\to 0} \frac{\cancel{x^2}+h^2+2xh-\cancel{5x}-5h+\cancel{1}-\cancel{x^2}+\cancel{5x}-\cancel{1}}{h} = \left[\frac{0}{0}\right] = \lim_{h\to 0} \frac{\cancel{h}(h+2x-5)}{\cancel{h}} =$$

$$= \lim_{h\to 0} (h+2x-5) = 2x-5$$

los puntos de tangente horizontal tienen derivada nula, entonces:

$$2x-5=0 \Leftrightarrow \boxed{x = \frac{5}{2}}$$