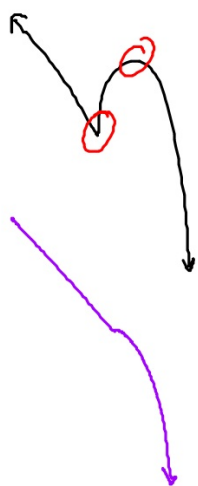


#40 |  $f(x) = \begin{cases} 3-x & x < 0 \\ 3+2x-x^2 & x \geq 0 \end{cases}$

$f(0) = 3$  local min

$f(1) = 4$  local max



$f'(x) = \begin{cases} -1 & x < 0 \\ 2-2x & x \geq 0 \end{cases}$

crit pts:

wnd  $x=0$  zero  $2-2x=0$   
 $x=1$

$$\#411 \quad f(x) = \begin{cases} -x^2 - 2x + 4 & x \leq 1 \\ -x^2 + 6x - 4 & x > 1 \end{cases} \quad f'(x) = \begin{cases} -2x - 2 & x < 1 \\ -2x + 6 & x > 1 \end{cases}$$



Crit #s

$$x = 1$$

$$-2x - 2 = 0$$

$$-2x + 6 = 0$$

$$x = -1$$

$$x = 3$$

$$f(-1) = -1 + 2 + 4 = 5 \text{ max (Abs)}$$

$$f(1) = -1 - 2 + 4 = 1 \text{ min}$$

$$f(3) = -9 + 18 - 4 = 5 \text{ max (Abs)}$$

