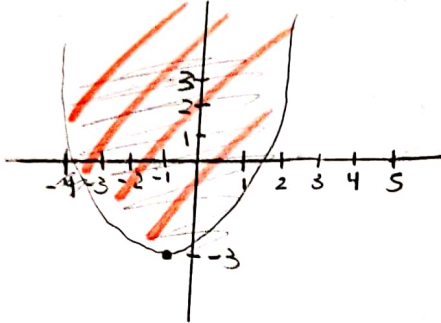


Regions of the Cartesian Plane

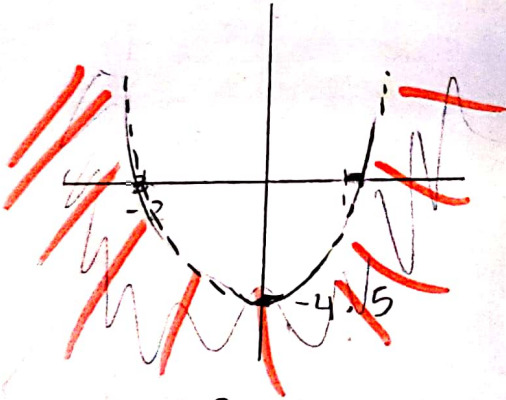
$y$  on left

Graph

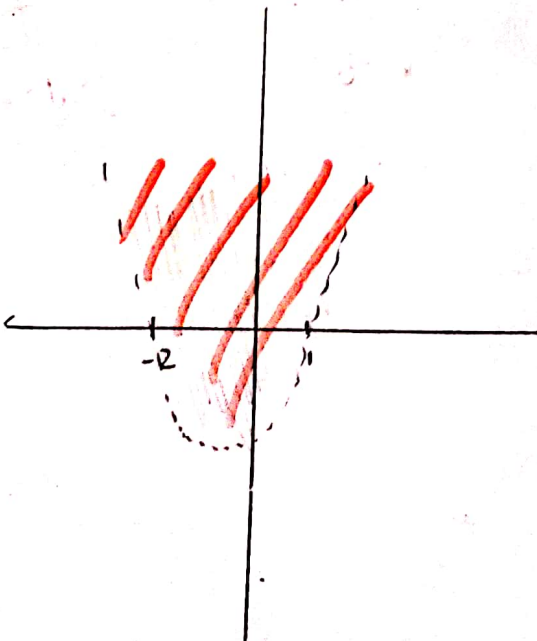
1)  $y \geq 2(x + 1)^2 - 3$



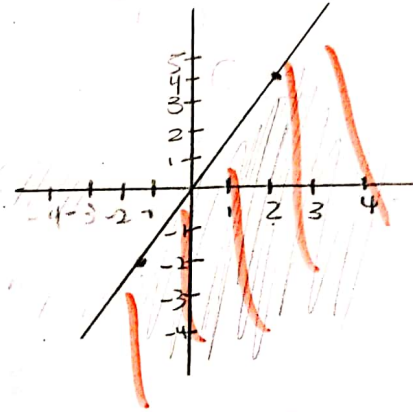
2)  $y < 2(x - 1)(x + 2)$



3)  $-2x^2 - 2x + 4 > -y$

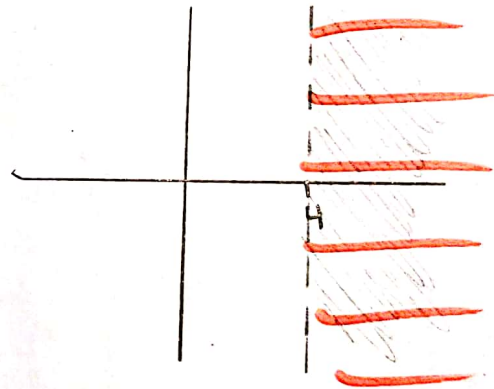


4)  $2x - y \geq 0$



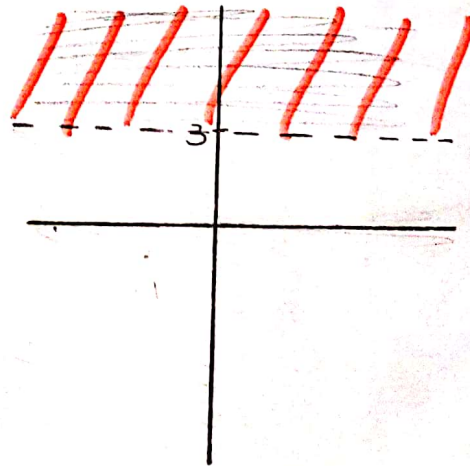
$y = 2x$   
 $y = 2(2)$

5)  $x > 4$



6)  $-y + 3 < 0$

$3 = y$



## Properties of a function

Determine the solutions of the inequality.

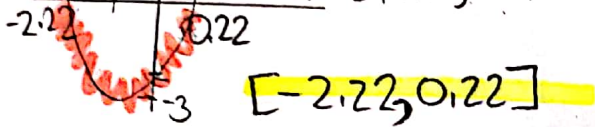
1)  $2 \geq 2(x+1)^2 - 1$

$2(x+1)^2 - 1 \leq 2$

$2(x+1)^2 - 3 \leq 0$

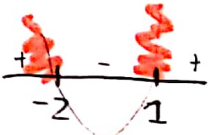
$\sqrt{(x+1)^2} = \pm\sqrt{3/2}$

$x = 0,22, -2,22$



2)  $0 < 2(x-1)(x+2)$

$x=1 \quad x=-2$



$] -\infty, -2[ \cup ] 1, +\infty[$

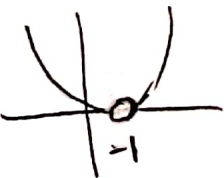
3)  $2x^2 + 4x > -2$

$2x^2 + 4x + 2 > 0$

$2(x^2 + 2x + 1) > 0$

$2(x+1)(x+1) > 0$

$] -\infty, -1[ \cup ] -1, \infty[$



X has to be on left

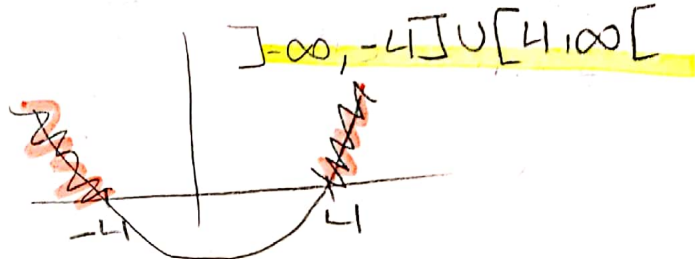
4)  $2(x+2)(x-2) \geq 24$

$2(x^2 - 4) - 24 \geq 0$

$2x^2 - 8 - 24 \geq 0$

$2x^2 - 32 \geq 0$

$2(x^2 - 16) \geq 0$



5)  $4 < -2x^2 + 6$



$] -1, 1[$

6)  $2x^2 - 3x + 6 > 6$

$2x^2 - 3x + 6 - 6 > 0$

$2x^2 - 3x > 0$

$x(2x - 3) > 0$

$x=0$

$x=3/2$

$] -\infty, 0[ \cup ] 1.5, \infty[$

