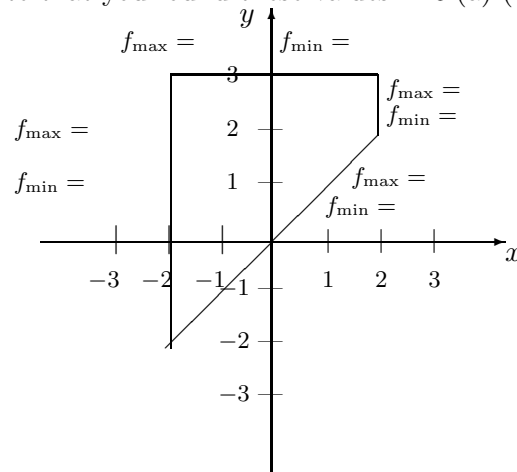




(c)  $x = 2$  and  $2 \leq y \leq 3$ .

(d)  $y = x$  and  $-2 \leq x \leq 2$ .

4. Consider the quadrilateral drawn below with vertices  $(-2, 3)$ ,  $(2, 3)$ ,  $(2, 2)$ , and  $(-2, -2)$ . Fill in the absolute maximum and minimum values of  $f(x, y)$  along the boundary of the quadrilateral. (Note that you found these values in 6.(a)-(d))



5. Which critical points of  $f(x, y)$  lie within the quadrilateral?
6. Use your classification of the critical points in 8., and the  $f_{\max}$ ,  $f_{\min}$  values on the boundary of the quadrilateral from question 7., to find the absolute maximum and minimum values of  $f(x, y)$  inside the quadrilateral. Where to these values occur?