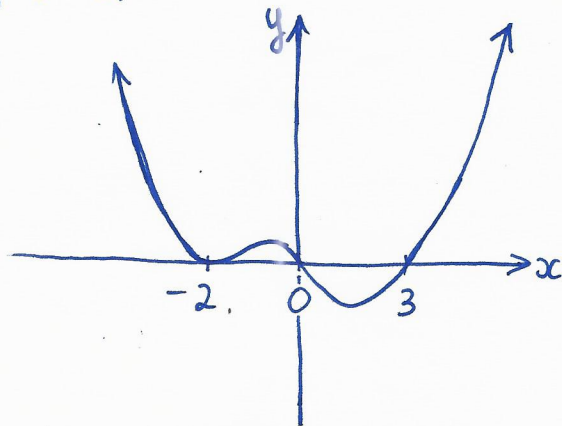


Thinking Questions

5) Create a quartic inequality for which $x = -2$, $0 \leq x \leq 3$ are the solutions.

It seems more convenient to work from a sketch. Set up the x -axis, position the values of interest to us on the x -axis and draw in the y -axis.



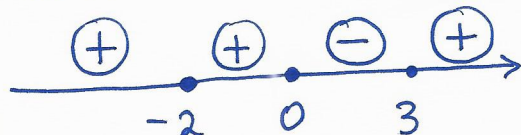
A way to include -2 is to have function bounce off the x -axis at that point and have a (≥ 0 or $0 \leq$) kind of inequality. Choosing $a > 0$

$$f(x) = a x (x+2)^2 (x-3)$$

e.g.

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

Check!



$$x = -2 \text{ or } 0 \leq x \leq 3$$