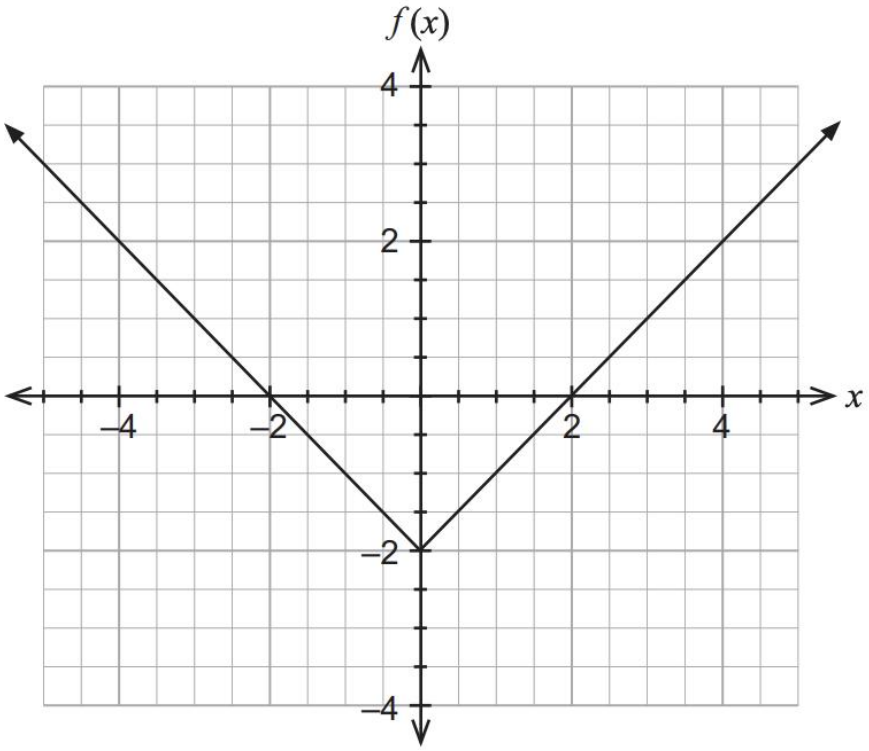
Question 21 **(5 marks)**

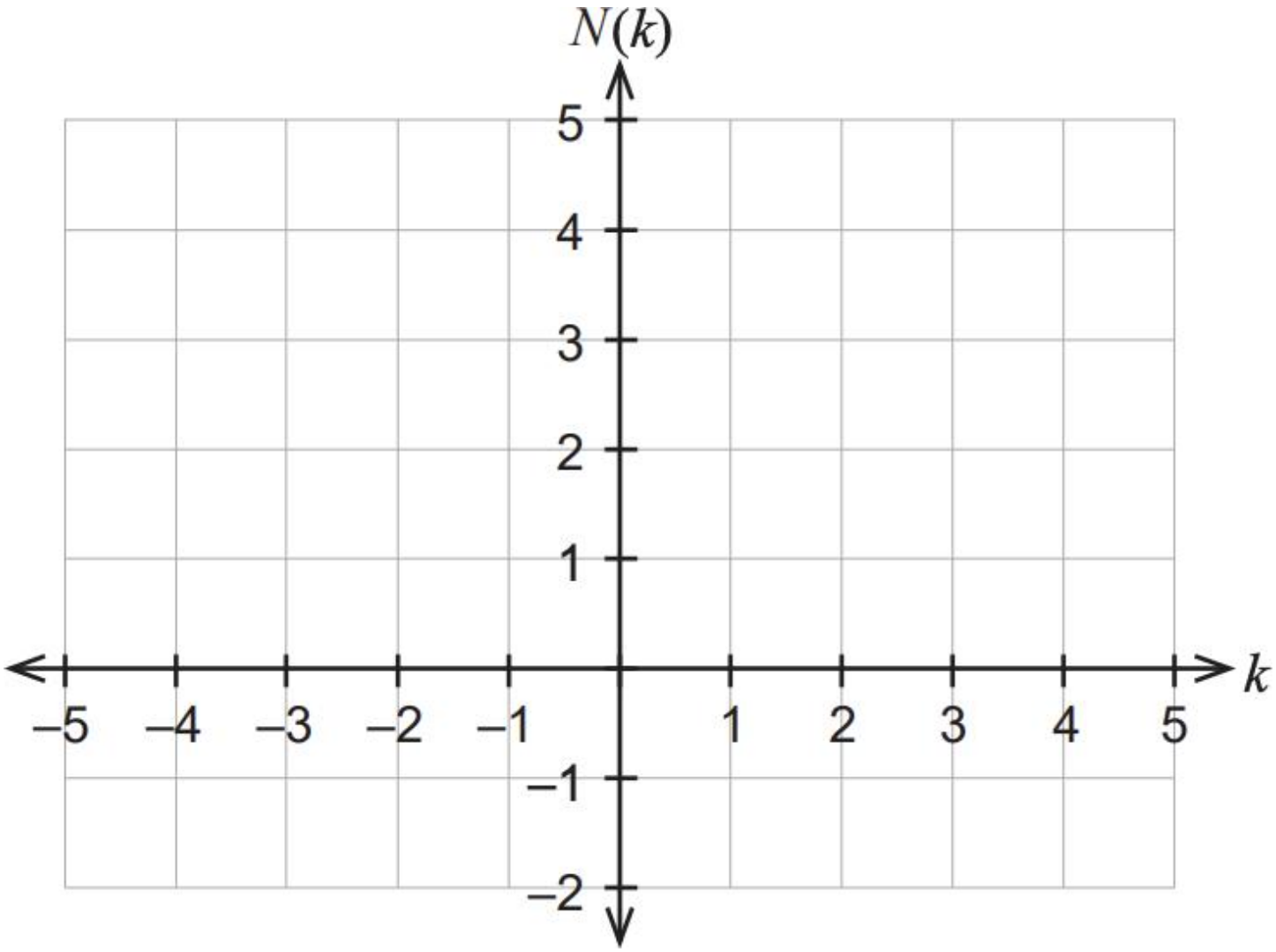
The sketch of the graph of $y = f(x)$ is shown below.



Consider the equation $|f(x)| = k$ where k is any real constant.

Define function $N(k)$ = the number of real solutions to the equation $|f(x)| = k$.

Sketch the graph of function $N(k)$ on the axes below.


N(k)
5
4
3
2
1
–5
–4
–3
–2
–1
1
2
3
4
5
k
–1
–2