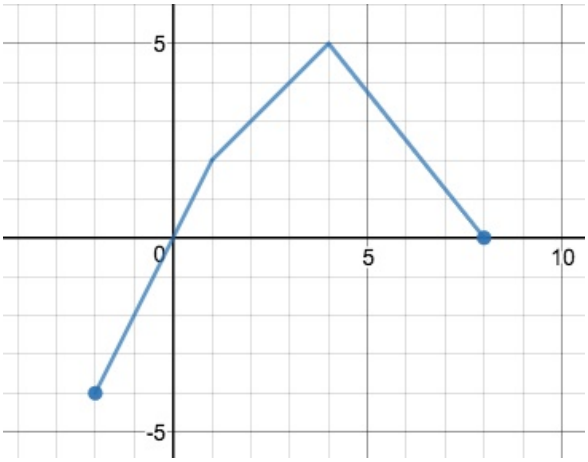
3) Below is the graph of a function $f(x)$:

a) How do we know from the graph itself that it is the graph of a function?

b) Is f(x) one-to-one? Explain.



5) a) **Without using synthetic or long division**, find the remainder when $x^4 + 4x^2 - 5x - 10$ is divided by $x + 1$. Explain, or show your work.

b) Using your result of (a), is $x + 1$ a factor of $x^4 + 4x^2 - 5x - 10$? Why or why not? (Do not do any more computations. Just use the result of part (a).)

7) Consider the polynomial $f(x) = x^3 - 2x^2 - 5x + 10$

a) Find one exact root of f, show that it is a root, and then use it to find all of the exact roots of f.

b) Use the roots you found in part (a) to factor f completely.