

Problem Definition

Problem 15. Find the limit if it exists.

$$\lim_{x \rightarrow -2^-} \frac{1}{(x+2)^2}$$

Solution Step 1:

From our previous work it is pretty easy to see that the singularity is not removable. So, the limit will not exist and in fact as x gets closer to the location of the singularity the values of the function will become unbounded. The only question is to determine if the values are positive or negative. Since $(x+2)^2$ is positive for any real value of x we can say

$$\lim_{x \rightarrow -2^-} \frac{1}{(x+2)^2} = \infty$$