Let $f(x) = \begin{cases} x & \text{if } x \text{ is a rational number} \\ x^2 & \text{if } x \text{ is an irrational number} \end{cases}$

For what values of a, if any, does $\lim_{x \to a} f(x)$ exist? Justify your answer.

I know that the answer is 0 and 1, but why? Please explain. Thank you.