Section 15 Problems - More Limits

(5) Show that the following limit doesn't exist.

$$\lim_{z \to 0} \left(\frac{z}{\bar{z}} \right)^2$$

(A) Show that the following limit doesn't exist.

$$\lim_{z \to 0} \frac{z - \bar{z}}{|z|}$$

(9) Assume that $\lim_{z \to z_0} f(z) = 0$ and that $|g(z)| \leq M$ where M is a large, positive, real number. Show that

$$\lim_{z \to z_0} f(z)g(z) = 0$$

Note: We DO NOT know that $\lim_{z \to z_0} g(z)$ exists. It might, it might not.