Section 4 quiz #3

Given $\lim_{x\to 4} f(x)=4$ $\lim_{x\to 4} g(x)=0$ $\lim_{x\to 4} h(x)=5$

Find the limit, IF it exists. If it does not exist, explain why

(1) $\lim_{x\to 4}(3f(x)+g(x)) = 3\cdot 4+0=12$

(2) $\lim_{x\to 4}(f(x))^3 = 4^3 = 64$

(3) $\lim_{x\to 4}\frac{h(x)}{g(x)}$ limit does not exist because $\lim_{x\to 4} g(x)=0$ so we get division by 0.

(4) $\lim_{x\to 4}\frac{5f(x)\,g(x)}{h(x)} = \frac{5\cdot 4\cdot 0}{5} = 0$

(5) $\lim_{x\to 4}\sqrt{f(x)} = \sqrt{4} = 2$