

No notes or calculators. Show all work.

1. (4 points) Let $\lim_{x \rightarrow 5} f(x) = 8$ and $\lim_{x \rightarrow 5} g(x) = -2$. Find the limit and simplify.

$$\lim_{x \rightarrow 5} \frac{4 * f(x) - g(x)}{2g(x)}$$

2. (4 points) Find the limit.

$$\lim_{x \rightarrow 36} \frac{\sqrt{x} - 6}{x - 36}$$

3. (2 points) State the interval(s) on which the function is continuous.

$$f(x) = \frac{x^2 + x}{(x + 8)(x - 3)}$$