

Math 181 Honors Quiz 10

① Use limit laws, algebraic manipulation and other properties of limits and continuous functions to compute

(i) $\lim_{x \rightarrow 2} (3x^2 + 4x - 5)$

(ii) $\lim_{x \rightarrow \frac{1}{2}} \frac{2x^3 + x^2 + 25x - 13}{2x - 1}$

(iii) $\lim_{x \rightarrow 1} \frac{\sqrt{x} - 1}{x - 1}$

② Let f and g be functions such that

$$\lim_{x \rightarrow p} f(x) = A \quad \text{and} \quad \lim_{x \rightarrow p} g(x) = B.$$

Show that $\lim_{x \rightarrow p} (f(x)g(x)) = AB$ using the δ - ϵ definition.