

score	possible	problem
	20	1
	20	2
	20	3
	20	4
	20	5
	100	

Name: _____

Name: _____

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Name: _____

Work in groups of 3 or 4. Show your work. Acknowledge any help on these specific problems.

Compute each limit. (Simplify and cancel so that you do not divide by zero, then plug in.)

/20 1. For $f(x) = x^3$, compute $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} =$

/20 2. For $f(x) = x^3$, compute $\lim_{z \rightarrow x} \frac{f(z) - f(x)}{z - x} =$

/20 3. For $f(x) = \sqrt{x}$, compute $\lim_{z \rightarrow x} \frac{f(z) - f(x)}{z - x} =$

/20 4. For $f(x) = (x + 1)^{-1}$, compute $\lim_{h \rightarrow 0} \frac{f(x + h) - f(x)}{h} =$

/20 5. Compute $\lim_{z \rightarrow x^-} \frac{z^2 - x^2}{|x - z|} =$