

WHAT DID THE NINJA TURTLES SAY WHEN HANDED THE EXPRESSION $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$?

For each function evaluate $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$.

$\lim_{h \rightarrow 0} \frac{1) \ f(x) = 3x + 2}{[3(x+h) + 2] - (3x + 2)}$ $\frac{\quad}{h}$	$\lim_{h \rightarrow 0} \frac{2) \ f(x) = 4x - 3}{[4(x+h) - 3] - (4x - 3)}$ $\frac{\quad}{h}$	$\lim_{h \rightarrow 0} \frac{3) \ f(x) = x^2}{(x+h)^2 - x^2}$ $\frac{\quad}{h}$
$\lim_{h \rightarrow 0} \frac{4) \ f(x) = x^2 - 5}{[(x+h)^2 - 5] - (x^2 - 5)}$ $\frac{\quad}{h}$	$\lim_{h \rightarrow 0} \frac{5) \ f(x) = 3x^2 + x}{[3(x+h)^2 + (x+h)] - (3x^2 + x)}$ $\frac{\quad}{h}$	$\lim_{h \rightarrow 0} \frac{6) \ f(x) = x^3}{(x+h)^3 - x^3}$ $\frac{\quad}{h}$
$\lim_{h \rightarrow 0} \frac{7) \ f(x) = 4x^2 + 2x - 7}{[4(x+h)^2 + 2(x+h) - 7] - (4x^2 + 2x - 7)}$ $\frac{\quad}{h}$	$\lim_{h \rightarrow 0} \frac{8) \ f(x) = x^4 + 1}{[(x+h)^4 + 1] - (x^4 + 1)}$ $\frac{\quad}{h}$	

Limits.

A. $f'(x) = 6x + 1$	C. $f'(x) = 4x + 2$	D. $f'(x) = 4x^3$	E. $f'(x) = 2x$	F. $f'(x) = 3x$
I. $f'(x) = 3$	K. $f'(x) = 4x$	R. $f'(x) = 3x^2$	T. $f'(x) = 8x + 2$	V. $f'(x) = 4$

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8	3	6	1	2	5	7	1	2	4	