

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

1) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{[3(x+h) + 2] - (3x + 2)}{h}$

2) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{[4(x+h) - 3] - (4x - 3)}{h}$

3) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{(x+h)^2 - x^2}{h}$

4) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{[(x+h)^2 - 5] - (x^2 - 5)}{h}$

5) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{[3(x+h)^2 + (x+h)] - (3x^2 + x)}{h}$

6) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{(x+h)^3 - x^3}{h}$

7) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{[4(x+h)^2 + 2(x+h) - 7] - (4x^2 + 2x - 7)}{h}$

8) $f(x) =$
 $\lim_{h \rightarrow 0} \frac{[(x+h)^4 + 1] - (x^4 + 1)}{h}$

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. $f'(x) = 4$