10.3 More on Limits

Target 9A,B,C: Evaluate a limit of a function analytically, graphically, & numerically
Target 9D: Calculate one-sided limits and two-sided limits

Review of Prior Concepts

If $f(x) = 2x^2 - 2$, find

a) $f(-1)$

b) $f(a)$

c) $f(x+h)$

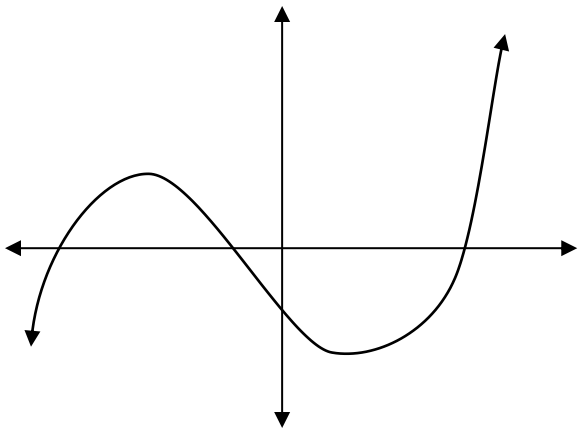
d) $\frac{f(x+h)-f(x)}{h}$

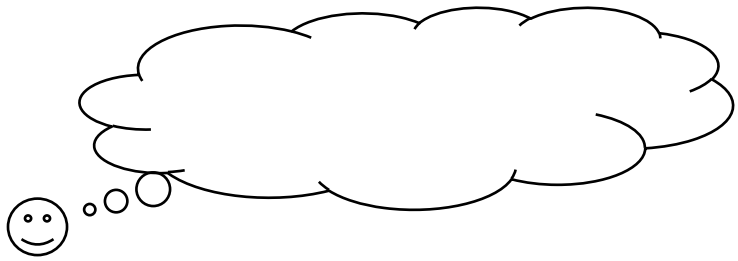
More Practice

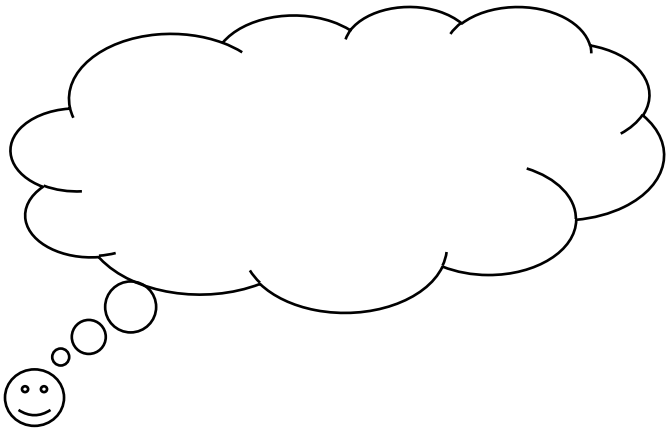
Evaluating Functions

http://www.mathsisfun.com/algebra/functions-evaluating.html
https://www.khanacademy.org/math/algebra/algebra-functions/evaluating-functions/e/functions_1
http://www.coolmath.com/algebra/15-functions/08-the-difference-quotient-01
https://youtu.be/E9YEUQR9NAU
https://youtu.be/1O5NEI8UuHM

The Tangent Problem







Examples:

1. Find the instantaneous rate of change @ $x = 2$ for $f(x) = 3x^2 - 2x + 1$

2. Find the derivative of $f(x) = 8x - 4$

3. Find $f'(x)$ for $f(x) = \sqrt{x}$

More Practice

The Tangent Line

http://clas.sa.ucsb.edu/staff/lee/secant,%20tangent,%20and%20derivatives.htm
http://tutorial.math.lamar.edu/Classes/CalcI/Tangents_Rates.aspx
https://youtu.be/qPOUPXlfEWU
https://youtu.be/uI9QLZGqV1A
https://youtu.be/ydHzk5zWd4I

Homework Assignment

p. 803 #3,7,9,11,23,25,29
p. 803 #12,13,24,26,28,31