

Tuesday, September 17

Explain the meaning of the two expressions below.

$$\lim_{x \rightarrow 5} f(x) = 6$$

$$f(5) = 7$$

$$f'(5) = -3$$

How are they the same?

How are they different?

September 17

Students will verbally explain how to
find the derivative

(using the words:
function, exponent, coefficient...)

Quotient Rule:

The derivative of the top function

times

the bottom function

minus

The derivative of the bottom function

times

the top function

all over the bottom squared

The derivative of the top function

times the bottom function

minus

The derivative of the bottom function

times the top function

all over the bottom squared

$$\frac{d}{dx} \left(\frac{f(x)}{g(x)} \right) = \frac{f'(x)g(x) - g'(x)f(x)}{g(x)^2}$$

$$m(n) = \frac{4n^6 - 12n}{9 - 5n^3}$$

find $m'(n)$

$$m'(n) = \frac{(24n^5 - 12)(9 - 5n^3) - (-15n^2)(4n^6 - 12n)}{(9 - 5n^3)^2}$$

$$m'(n) = \frac{(24n^5 - 12)(9 - 5n^3) + 15n^2(4n^6 - 12n)}{(9 - 5n^3)^2}$$

$$f(x) = \frac{(9x^2 + 12x - \sqrt{x})(15 - \frac{1}{x})}{x^3 - 7x^4}$$

find $f'(x)$