**PRODUCT RULE**

The derivative of f(x)g(x) is f’(x) g(x) + f(x) g’(x)

In words this means that the derivative of a product of two functions is the derivative of the first function times the second function, plus the first functions times the derivative of the second function.

For example: 

First figure out which part of the equation is the first function and which is the second function. We have them divided by the slash:



Next, take the derivative of the first term times the second, plus the first term times the derivative of the second term:



In addition, you can take out a like term: 

**Quotient Rule**

The derivative of 

In words this means that the derivative of a quotient is the derivative of the numerator times the denominator minus the numerator times the derivative of the denominator, all divided by the denominator squared.

For example: 

Next take the derivative of the function: 

Combine like terms:  

Finally you can get an answer of: 