

In the discussion area, solve your two custom application problems using the concepts you have learned. Apply your CINs in the bracketed spaces (the first digit is [a], the second digit is [b], and so forth.)

Problems

Find the first derivative of the following functions and evaluate at the given point. Show supporting work and underline your answer. Please use MathType for your supporting work.

1. Quotient Rule- Round your answer to two decimal places.

$$g(x) = \frac{[a]x - [b]}{[c]x + [d]} \text{ and evaluate at } x = [d]$$

2. Product and Power Rules- Your answer will be a large number.

$$h(x) = [c]x^2([e]x + [d])^4 \text{ and evaluate at } x = [a]$$

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Problems

For both problems, show supporting work and underline your answer. Please use MathType.

1. Find the second derivative of $f(x) = ([d]x + [b])^4$ and evaluate it at $x = 3$.
2. Find the equation of the line tangent to the following curve at $x = 1$. Write your answer in $y = mx + b$ format.

$$y = [a]x^2 + [c]x - [d]$$