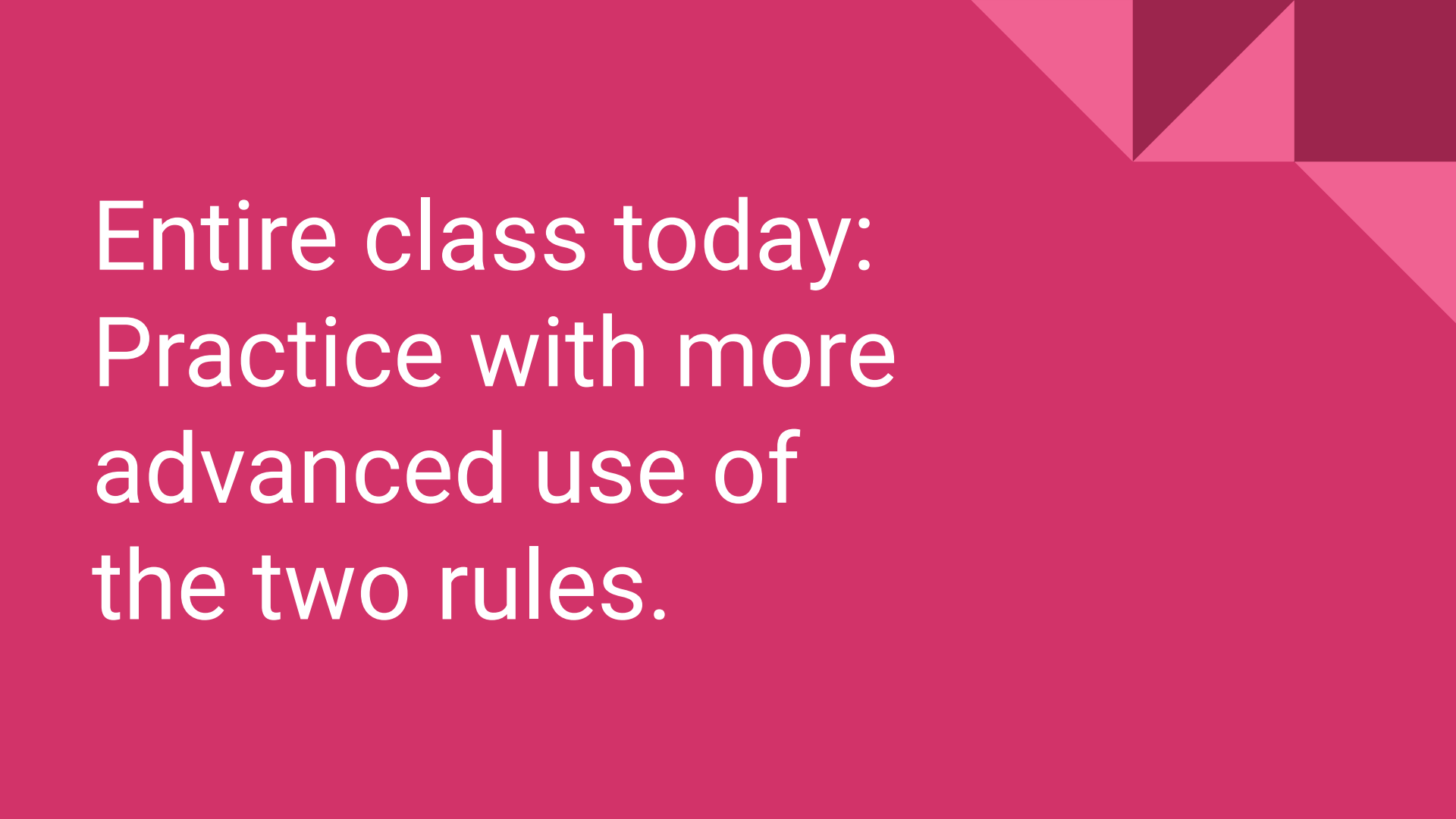


Applying the Product and Quotient Rules

MTH 201 – Module 5A part 2



Entire class today:
Practice with more
advanced use of
the two rules.

The background is a solid pink color. In the top right corner, there is a geometric pattern consisting of several squares and triangles in different shades of pink and magenta, creating a stepped, architectural look.

ASK MORE QUESTIONS

Activity 2.3.4. Use relevant derivative rules to answer each of the questions below. Throughout, be sure to use proper notation and carefully label any derivative you find by name.

a. Let $f(r) = (5r^3 + \sin(r))(4^r - 2\cos(r))$. Find $f'(r)$.

b. Let $p(t) = \frac{\cos(t)}{t^6 \cdot 6^t}$. Find $p'(t)$.

c. Let $g(z) = 3z^7 e^z - 2z^2 \sin(z) + \frac{z}{z^2+1}$. Find $g'(z)$.

d. A moving particle has its position in feet at time t in seconds given by the function $s(t) = \frac{3\cos(t) - \sin(t)}{e^t}$. Find the particle's instantaneous velocity at the moment $t = 1$.

e. Suppose that $f(x)$ and $g(x)$ are differentiable functions and it is known that $f(3) = -2$, $f'(3) = 7$, $g(3) = 4$, and $g'(3) = -1$. If $p(x) = f(x) \cdot g(x)$ and $q(x) = \frac{f(x)}{g(x)}$, calculate $p'(3)$ and $q'(3)$.

DON'T simplify the results on these three.

Feedback/questions

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