

MA 16020 EXAM 3 STUDY GUIDE: CALCULUS I

DERIVATIVES FORMULAS

- Product Rule: If $y = u(x)v(x)$, then

$$y' = u'(x)v(x) + u(x)v'(x)$$

- Quotient Rule: If $y = \frac{u(x)}{v(x)}$, then

$$y' = \frac{u'(x)v(x) - u(x)v'(x)}{v^2(x)}$$

- Chain Rule: If $y = f(g(x))$, then

$$y' = f'(g(x)) \cdot g'(x)$$

HIGHER ORDER DERIVATIVES

Recall the derivative of a function $y = f(x)$ is $y' = f'(x)$. So, the derivative of the derivative is $y'' = f''(x)$. And so on...