

Math 16B

Kouba

Differentiation Rules

1. $D\{c\} = 0$

2. $D\{mx + b\} = m$

3. $D\{x^n\} = nx^{n-1}$ (POWER RULE)

4. $D\{f(x) \pm g(x)\} = f'(x) \pm g'(x)$

5. $D\{f(x)g(x)\} = f(x)g'(x) + f'(x)g(x)$ (PRODUCT RULE)

6. $D\left\{\frac{f(x)}{g(x)}\right\} = \frac{g(x)f'(x) - f(x)g'(x)}{[g(x)]^2}$ (QUOTIENT RULE)

7. $D\{f(g(x))\} = f'(g(x))g'(x)$ (CHAIN RULE)

8. $D\{\sin x\} = \cos x$

9. $D\{\cos x\} = -\sin x$

10. $D\{\tan x\} = \sec^2 x$

11. $D\{\sec x\} = \sec x \tan x$

12. $D\{\cot x\} = -\csc^2 x$

13. $D\{\csc x\} = -\csc x \cot x$