

Math 114 Fall 2017  
Calculus I HW 7  
Due Wednesday, October 31

Please be careful about parentheses, especially in the chain rule problems. Leaving out parentheses can make your answers actively wrong, and we will take off points for bad parenthesization.

1. Stewart 2.5.8
2. Stewart 2.5.12
3. Stewart 2.5.22
4. Stewart 2.5.36
5. Stewart 2.5.42
6. Find

$$\frac{d}{dx} \sqrt[5]{\frac{x^2 \sin(3x)}{\tan(x)}}$$

7. Find

$$\frac{d}{dx} \tan^4(\sqrt[3]{x^5 + x^3 + 2} + 1).$$

8. Stewart 2.5.44
9. Stewart 2.8.5 (no graphing)
10. Stewart 2.8.12
11. (★) Stewart 2.8.16
12. Stewart 2.6.10
13. Stewart 2.6.20
14. Stewart 2.6.22
15. Stewart 2.6.26

16. Suppose  $f(x) = ax^2 + bx + c$  satisfies  $f(2) = 1, f'(2) = 2, f''(2) = 3$ . Find  $f(x)$ .
17. Prove that  $f(x) = \sin(x) + x^2$  satisfies  $f''(x) + f(x) = x^2 + 2$ .