

Math 114 Fall 2019  
Calculus I HW 1 Solutions  
Due **Friday**, September 6

1. Give a zeroth-order approximation to  $\sqrt[3]{30}$ . Explain your answer in a few words.

**Solution:** The function  $\sqrt[3]{x}$  is continuous, and 30 is close to 27. so we expect  $\sqrt[3]{30}$  to be close to  $\sqrt[3]{27} = 3$ .

2. Give a zeroth-order approximation to  $\tan(.03)$ . Explain your answer in a few words.

**Solution:** The function  $\tan(x)$  is continuous, and .03 is close to 0, so we expect  $\tan(.03)$  to be close to  $\tan(0) = 0$ .

3. Stewart 1.4.12
4. Stewart 1.4.14
5. Stewart 1.4.18
6. Stewart 1.4.22
7. Stewart 1.4.24
8. Stewart 1.4.26
9. (★) Stewart 1.5.6
10. (★) Stewart 1.5.8