

Math 114 Spring 2018
Calculus I HW 5
Due Friday March 2

Make sure you have Stewart essential calculus early transcendentals second edition!

1. Stewart 1.4.34
2. Stewart 1.4.36
3. (★) Using the squeeze theorem, show that

$$\lim_{x \rightarrow -2} \frac{x+2}{2 + \sin\left(\frac{1}{x+2}\right)} = 0.$$

4. Stewart 1.4.50
5. Stewart 1.4.52 (Hint: what trig identities do we know? Can we make one of them show up?)
6. Stewart 1.4.54
7. (★) Stewart 1.5.6
8. (★) Stewart 1.5.8
9. Stewart 1.5.16
10. Let

$$f(x) = \begin{cases} x+3 & x > 2 \\ x^2+1 & x < 2 \end{cases}$$

Define a function that extends f and is continuous at all real numbers.

11. Let

$$g(x) = \begin{cases} x^2-5 & x > -1 \\ 4x & x < -1 \end{cases}$$

Define a function that extends g and is continuous at all real numbers.

12. Stewart 1.5.30