Notes: * there will be regular homework assignments, assigned through WEBassign, which will contribute to your grade, and will consist of some of the problems below. Register and log into WEBassign for details.

* The majority of problems on our 4 major exams will be similar to homework problems, so it’s essential to attempt all of the homework problems, even those not graded through WEBassign.

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* Week 1/2 (Aug 29 - Sep 7)

Section 1.4, p. 29 ex: 1, 2, 4, 15, 18, 19, 21, 22, 26

1. Suppose \( \sin \Theta = \frac{1}{3} \) and \( \tan \Theta = -\frac{1}{16} \). a) Which quadrant is \( \Theta \) in? b) Find \( \cos \Theta \) and \( \sec \Theta \).

Section 1.5, p. 33 ex: 27, 28, 31, 33, 35, 43
Section 1.6, p. 47 ex: 5, 7, 19, 27, 28, 29, 31, 33

2. Sketch the graph of each function: a) \( f(x) = 2^x - 1 \) b) \( g(x) = 2^{-x} + 1 \) c) \( h(t) = 3^{1/t} \)

3. Find the inverse function for \( y = f(x) = e^{2x-3} \)

4. Consider \( f(x) = \frac{1+3x}{5-2x} \), \( 0 \leq x \leq 2 \), which is one-to-one.

   a) Find a formula for \( f^{-1}(x) \)
   b) Find the domain and range of \( f^{-1} \)

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* Week 2/3 (Sep 8 - Sep 16)

Section 2.2, p. 69 ex: 6, 40, 49, 50
Section 2.3, p. 74 ex: 2, 5, 9, 13, 16, 18, 19, 23, 26, 27, 28, 29, 30
Section 2.5, p. 88 ex: 9, 13, 15, 25, 27, 34, 37, 49
Section 2.6, p. 92 ex: 4, 17, 21, 23, 25, 29, 33

5. Determine each limit. If the limit is \( +\infty \) or \( -\infty \), say so.

   a) \( \lim_{x \to 3} \frac{x-3}{\sqrt{x+6} - 3} \) b) \( \lim_{x \to 1^+} \frac{x}{x^2-1} \) c) \( \lim_{x \to 2} \frac{x^2-3x+1}{x^3-2x^2} \)

Section 3.1, p. 118 ex: 13, 14, 19, 21, 29, 37, 39, 54, 55
Section 2.4, p. 82 ex: 2, 3, 4, 17, 23, 27, 51, 55, 57, 67, 69, 71
Section 2.8, p 102 ex: 1, 3, 5, 7
6. Suppose \( f(x) = \frac{x^2 - 2x - 8}{x + 2}, \ x \neq -2 \)

Is it possible to define \( f(-2) \) so that \( f(x) \) is continuous at \( x = -2 \)? If so, what should \( f(-2) \) be?

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* Week 4 *(Sep 19 - Sep 23)*

Section 2.7, p. 93 ex: 1, 9, 13, 17, 21, 23, 35, 38

7. Suppose \( f(x) = \frac{2x^2}{x^2 + 3x - 10} \)

Find all vertical & horizontal asymptotes of the graph \( y = f(x) \).

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Exam #1 takes place in lecture on Thursday, September 22 and will consist primarily of problems similar to those on homework #1.