Homework 1: p. 143 # 9, 22; p. 132, # 15; p. 235, # 31, 63; p. 260, # 9; p. 314, # 23; p. 388, # 5, 47; p. 365, #28
For Quiz 1: p. 375 # 19; p. 383 # 3, 45; p. 407 # 35, 43
Homework 2: p. 474 # 34,36,48,49,50; p. 484 # 28,32,42,49,73.
For Quiz 2: p. 493 # 38,54,60,68,71
For # 38 use implicit differentiation.
Homework 3: p. 500, #40,62,92 For # 40: You dont need to use logorithmic diferentiation
p. 530, # 14,74,104,119,127,128,147
Quiz 3: p. 559 # 18,29,38,50,54,66
Homework 4 (first part): p. 568 #1,31,37,44

Due to the short week, there will be no second part of homework 4 (so it will be worth half the points of a normal homework). Also, there will be no quiz, due to the exam. Nevertheless, here are the "quiz practice problems", which are fair game for the exam: p.579, # 12,20,22,45,50,51

Homework 5: p. 585 # 10,16,24,34,45,46; p. 591 # 12,26,41,44
Quiz 4: p. 631 # 36,44,50,58,65,66,67
Homework 6: p. 648 # 10,12,14,19,20,21,22; p. 657 # 6,10,16,26,32,34
Quiz 5: p. 757 # 24,36,46,50,90a
Homework 7: p. 769 # 8,16,26,36,40,66,71,75,77, p. 776 # 2,10,14,22,32,37,38,39,42
Quiz 6: p. 781 # 2,8,14,28,36,38,40
Homework 8: p. 786 # 2,8,14,22,30,46,47, p. 792 # 2,6,14,22,34,54,57,61a
Quiz 7: p. 804 # 8,16,28,39,41,42,46
Homework 9: p. 810 # 2,4,8,21,26,29
Quiz 8: Review homework 9.
Homework 10: p. 819 # 2,5,8,13,25,30a
Since there will be an exam on November 16th, homework 10 will not be collected. All material between exam 1 and homework 10, inclusive, are fair game for the exam.
Due to the short week, Homeworks 11 and 12 will both be collected on the week after break.
Homework 11:
1. cc = cubic centimeters.
Salt water which has a concentration of 0.1 g salt per cc of water is entering a tank at a rate of 10 cc per minute. Initially ($t = 0$) the tank contains a solution of 100 cc of water with 20 grams of salt dissolved in it. Completely mixed solution is exiting the tank at 1 cc per minute. If t represents the number of minutes after the moment when the tank had 100 cc of solution, find a function that describes the amount of salt in the tank as a function of t. Simplify as much as you can, but only as much as you can reasonably easily do. Hint: look at p.655.

2. Write the 2nd order Taylor polynomial approximation with the remainder

in little-o notation:

$$\frac{e^x - 1}{x}$$

3. Use a Taylor series expansion with little-o notation to find the limit:

$$\lim_{x \to 0} \frac{1 - \cos 2x - 2x^2}{x^4}$$

Homework 12: p.831 # 3,14,19,37,39,58,66
Homework 13: p.839 # 3,4,5,16, section 9.3 # 2,3,11,12. Feel free to use a calculator.
Homework 14:
1. Use the formulas $e^{i\theta} = \cos\theta + i\sin\theta$ and $e^{w+z} = e^w e^z$ to prove that $\cos(x+y) = \cos x \cos y - \sin x \sin y$, and to prove a similar formula for $\sin(x+y)$.

2. Given the differential equation $ay'' + by' + cy = 0$,
a) show that $y = e^{\lambda x}$ is a solution to the differential equation if $a\lambda^2 + b\lambda + c = 0$.
b)If λ_1 and λ_2 are both roots of the above quadratic equation, then for any complex numbers c_1 and c_2, $y = c_1 e^{\lambda_1 x} + c_2 e^{\lambda_2 x}$ is also a solution to the differential equation.

3. Let $f(z) = z^2$. Show that f maps a ball of radius 2^{-7} centered at $2e^{\pi i/3}$ into a ball of radius 2^{-4} centered at $4e^{2\pi i/3}$.