1 This list is not in final form. Like, stuff may yet be added to it.

2 The final exam is

   Wednesday
   5/10/06
   3:30 PM - 5:30 PM
   in our usual classroom.

3 The following suggests a review based on problems which didn’t pan out well for you on the various tests.

   You could begin by looking at the problems where you and the class got low scores. The following suggests odd-numbered from-text problems resembling the exam problems.

4 Reviewing Test #1. The note numbers pertain to the problems in the test.

   (1) For problem 1, (1.6: 47, 49)
   (2) (1.2: 35, 37, 39, 49, 51, 53, 55) (129: 27) (132: 4c)
   (3) Problem 3 has two parts:
      (a) (1.4: odds 27-35) (129: 59) (132: 4e)
      (b) (1.4: 37, 43) (132: 4f) Begin the exam problem by translating all the negative exponents to fractions.
   (4) Problem 4:
      (a) Think inside the box: (1.3: 21, 29)
      (b) Distributing minus signs: (1.3: 3, 5, 7)
      (c) Our text appears to have nothing exactly like 4c.
      (d) See 3a
   (5) Calculus factoring: (1.3: 87, 89) (1.4: 53, 55, 57)
   (6) Solving equations where you need to check your solution candidates back in the original equation: (1.5: odds 39-47) (4.5: odds 35-51)
   (7) Inequalities where a sign-change chart is just the thing: (1.7: 31, 43, 49, 51) (2.1: 59) (3.1: 13, 15, 17, 19) (4.2: 59, 61)
(8) Pythagoras stuff: (1.6: odds 27-35)

(9) Circle stuff: (1.8: odds 73-85)

(10) See notes above for problem 6.

5  Here’s an answer key for Assignment #5:

(1) (i) \( Y_1 = 4 \)
    (ii) \( Y_2 = -1 \)
    (iii) \( Y_3 = -5 \)
    (iv) \( Y_4 = 5 \)
    (v) \( Y_5 = 1 \)
    (vi) \( Y_6 = 8x \)
    (vii) \( Y_7 = 5 \)
    (viii) \( Y_8 = \frac{2x}{x^2 - 4} \)
    (ix) \( Y_9 = \frac{-4}{x^2 - 4} \)
    (x) \( Y_{10} = \frac{-5}{(x + 2)(x - 3)} \)
    (xi) \( Y_{11} = \frac{-2x}{x^2 - 9} \)

(2) (i) \( Y = x + 6 \)
    (ii) \( Y = -x + 3 \)
    (iii) \( Y = -2x - 3 \)
    (iv) \( Y = -4 \)
    (v) \( Y = -x - 10 \)
    (vi) \( Y = 3x^2 + 14x - 24 \)
    (vii) \( Y = -4x^2 - 20x + 5 \)
    (viii) \( Y = \frac{3x - 4}{(2x + 1)(x - 5)} \)
    (ix) \( Y = -\frac{x + 6}{(2x + 1)(x - 5)} \)
    (x) \( Y = 4\frac{1}{(2x + 1)(2x + 5)} \)
    (xi) \( Y = \frac{x^2 + 29x - 5}{(3x - 2)(2x + 5)} \)

6  Reviewing Test #2:

(1) Difference quotient and substitutions: (2.1: 13, 15, 29, 31, 33) (Assignment #17 warmups)

(2) Zeros of polynomials: (3.3: 45, 47, 49) (3.5: 45, 49) (328: 5, 6)

(3) Quadratic graphing: (2.6: 9, 11, 13, 27, 35)

(4) Inverse: (2.9: 37, 39, 41)

(5) Ungraphing: Assignment #21 (key below)

(6) (3.1: 13, 15, 17, 19)

(7) (2.7: 27) and Assignment #24 (key below)

(8) (242: 53)
7 Assignment #21 key:

(1) (a) Solid: $y = x^2 - 4x + 6$
(b) Skimpy: $y = -\frac{1}{2}x^2 + 2x + 6$

(2) (a) Solid: $y = -\frac{2}{9}x^2 + \frac{4}{3}x + 1$
(b) Skimpy: $y = -\frac{3}{4}x^2 + \frac{9}{2}x - \frac{15}{4}$
(c) $\left(3 + \frac{3\sqrt{6}}{2}, 0\right)$ and $\left(3 - \frac{3\sqrt{6}}{2}, 0\right)$
(d) $\left(0, -\frac{15}{4}\right)$

(3) (a) $NQ = -3$
(b) $NQ = 8x - 3 + 4h$
(c) $NQ = -8x + 3 - 4h$

8 Here is a key for Assignment #24:

(1) If $x$ denotes the number of passengers, then the slope is $-20$ and $R_{\text{max}}$ occurs when $x = 110$, that is, when 110 passengers buy tickets at $2200.

(2) If $x$ denotes the number of trees in the orchard, then the slope is $-2$, and the total yield is greatest when the orchard has 55 trees.

(3) If $x$ denotes the length of the sides at right angles to the river, and $y$ denotes the length of the side parallel to the river, then the problem can be rendered as

Maximize $Area = xy$
subject to $3x + 4y + 3x = 5400$.

It develops that the maximum-area alligator pen is 675 yd long along the river, and 450 yd deep back from the river.

9 Reviewing Test #3:

(1) (a) (4.1: 49, 51, 53)
(b) (4.4: 55, 57, 59) On the test, several changed the compounding scheme form “quarterly” to “continuously”. The bank wouldn’t do that, so neither should you.
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(2) (4.2: 1, 3, 5)
(3) Check the note above for test #1, problem 6.
(4) Check the note above for test #2, problem 2.
(5) (328: 4)
(6) (3.5: 12, 13, 14)
(7) (3.2: 7, 9) (3.6: 35, 39, 43, 49)

10 Types of questions for Chapter 8:

(a) Use the augmented-matrix and row-operation approach to linear systems: (713: 3, 4) (8.4: 33, 35, 37)
(b) How the augmented-matrix and row operation indicates “no solutions” or “many solutions”: (8.4: 19, 21, 25, 27, 37, 39)
(c) Multiply matrices: (712: 29, 31, 33, 35)
(d) Set up a simple story problem
   (i) name variables so you can explain what your algebraic results mean.
   (ii) set up equations
   (iii) solve and check
   (iv) in-context prose summary (for instance, translate $x = 40$ to “Ronald must serve 40,000,000 french fries in Ada County”).
   
   Simple problems of this ilk: (8.4: 41, 43, 45). A little stickier: (711: 23) (8.3: 37)
(e) Be able to use Cramer’s rule to solve a system of two equations in two unknowns (This doesn’t work for all systems, right?) (712: 43, 45) (713: 2)
(f) Compute a matrix inverse, or conclude it has none: (8.6: 5, 9, 11, 15, 17)
(g)
(h)