Exam #2 Practice Problems

1. Suppose you have a game played with two piles of pennies. On your turn you may either remove exactly one penny from either pile, or else you may remove exactly two pennies, one from each piles. The person who takes the very last penny wins. The starting position is $(3, 6)$. What is the winning strategy?

2. Suppose you have a geometric sequence $a_0, a_1, a_2, \ldots$ such that $a_9 = 4a_6$ and $a_5 = 10$. Find the exact value of a_2.

3. Suppose you have an isosceles trapezoid with bases of length 25 and 15, and legs each of length 13. Extend the two legs so that they meet to form the apex of an isosceles triangle with base 25. What is the area of this large triangle? What is the area of the original trapezoid?

4. p. 93, #2

5. p. 127, #5

6. p. 157, #12

7. p. 180, #11

8. p. 213, #13

9. p. 245, #9

10. p. 381, #1e