

**book problems**

section 2.3 1, 2, 3, 13, 17, 18, 23

section 2.4 2(a &amp; c), 4, 6, 8, 12

**Extra credit problem:**

1. For positive integers  $a, b$ , we denote by  $S(a, b)$  the set of all possible sums of the numbers  $a$  and  $b$ , with arbitrary multiplicities. For example,  $S(4, 7) = \{4, 7, 8, 11, 12, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, \dots\}$ . Assume that  $a, b$  are two positive integers such that  $(a, b) = 1$ . Let  $c = ab - a - b$ .
  - a. Prove that  $c$  is not in the set  $S(a, b)$ . (1 point)
  - b. Prove that every integer larger than  $c$  belongs to  $S(a, b)$ . (2 points)
  - c. How does this relate to football? (0 points)