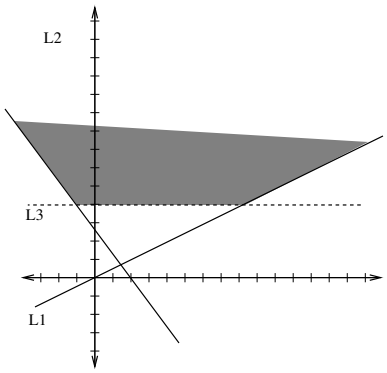
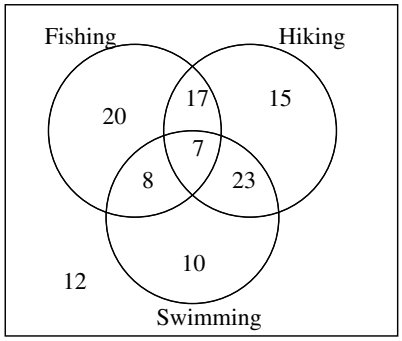
1. Feasible region is the shaded part.



2. (a) Value: 3
   Location:$\overline{CF}$
   (b) Value: 11
   Location: G

3. venn diagram



4. (a) $25 + 15 + 12 = 52$
   (b) $25 + 15 + 12 + 35 = 87$
   (c) $15 + 20 + 9 + 15 + 12 = 71$

5. prizes are selected to take home, so we don't worry about order.
   (a) S = {FG, FH, FI, GH, GI, HI}
   (b) { FG, GH, GI}

6. (a) {h }
   (b) {a, b, e, f, g}
   (c) True
   (d) False

7. any two sets with something in common. {1, 2, 3} and {2, 4, 6}

8. 2^{11}

9. use a venn diagram. Answer= 27

10. $C(18, 7)$

11. $C(20, 5)C(15, 4) + C(10, 3)C(25, 6) - C(10, 3)C(20, 5)C(5, 1)$

12. $6 * 5 * 10 * 10 * 10$

13. $3! * (4! * 3! * 5!)$

14. $P(8, 3) * C(12, 4) * C(9, 2)$

15. Total - don't want.
   (a) $C(23, 9) - [C(8, 0)C(15, 9) + C(8, 1)C(15, 8)]$
   (b) $C(10, 6)C(13, 3) + C(8, 6)C(15, 3)$

16. $C(13, 6) * C(7, 2) * C(5, 4) * C(1, 1)$
   or $\frac{13!}{6!2!4!}$

Check the back of the page for more problems.