

5.45 Because the experimenter knew which subjects had learned the meditation techniques, he (or she) may have had some expectations about the outcome of the experiment: if the experimenter believed that meditation was beneficial, he may subconsciously rate that group as being less anxious.

5.46 (a) If only the new drug is administered, and the subjects are then interviewed, their responses will not be useful, because there will be nothing to compare them to: How much "pain relief" does one expect to experience? (b) Randomly assign 20 patients to each of three groups: Group 1, the placebo group; Group 2, the aspirin group; and Group 3, which will receive the new medication. After treating the patients, ask them how much pain relief they experienced, and then compare the average pain relief experienced by each group. (c) The subjects should certainly not know what drug they are getting—a patient told that she is receiving a placebo, for example, will probably not experience any pain relief. (d) Yes—presumably, the researchers would like to conclude that the new medication is better than aspirin. If it is not double-blind, the interviewers may subtly influence the responses of the subjects.

5.47 (a) Ordered by increasing weight, the five blocks are (1) Williams-22, Deng-24, Hernandez-25, and Moses-25; (2) Santiago-27, Kendall-28, Mann-28, and Smith-29; (3) Brunk-30, Obrach-30, Rodriguez-30, and Loren-32; (4) Jackson-33, Stall-33, Brown-34, and Cruz-34; (5) Birnbaum-35, Tran-35, Nevesky-39, and Wilansky-42. (b) The exact randomization will vary with the starting line in Table B. Different methods are possible; perhaps the simplest is to number the subjects from 1 to 4 within each block, then assign the members of block 1 to a weight-loss treatment, then assign block 2, etc. For example, starting on line 133, we assign 4-Moses to treatment A, 1-Williams to B, and 3-Hernandez to C (so that 2-Deng gets treatment D), then carry on for block 2, etc.

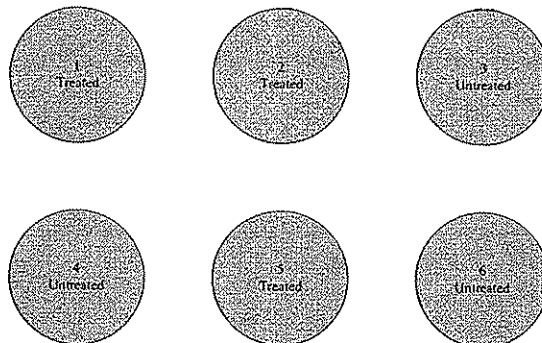
| 47 a) | <u>Block 1</u> | <u>Block 2</u> | <u>Block 3</u> | <u>Block 4</u> | <u>Block 5</u> |
|-------|----------------|----------------|----------------|----------------|----------------|
| 1. | Williams 22 | Santiago 27 | Brunk 30 | Jackson 33 | Birnbaum 35 |
| 2. | Deng 24 | Kendall 28 | Obrach 30 | Stall 33 | Tran 35 |
| 3. | Hernandez 25 | Mann 28 | Rodriguez 30 | Brown 34 | Nevesky 39 |
| 4. | Moses 25 | Smith 29 | Loren 32 | Cruz 34 | Wilansky 42 |

Line 133 + 134

45740 41807 65561 33302 07051 93623 18132 09547
 27816 28416

| <u>Block 1:</u> | <u>Block 2:</u> | <u>Block 3</u> | <u>Block 4</u> | <u>Block 5</u> |
|-----------------|-----------------|----------------|----------------|----------------|
| Moses → A | Mann → A | Rodriguez → A | Jackson → A | Wilansky → A |
| Williams → B | Kendall → B | Obrach → B | Brown → B | Tran → B |
| Hernandez → C | Santiago → C | Brunk → C | Stall → C | Birnbaum → C |
| Deng → D | Smith → D | Loren → D | Cruz → D | Nevesky → D |

5.48 (a) A figure with 6 circular areas is shown below. Table B was used to select 3 for the treatment, starting at line 104. The first 4 digits are: 5 2 7 1. We cannot use the 7 because it is more than 6. Therefore, we would treat areas 5, 2 and 1.



(b) A figure with 3 pairs of circular areas is shown below. For each pair, we randomly pick one of the two to receive the treatment. A random number was generated for each pair. If the random number was even, then top area was treated and the bottom area was untreated. If the random number is odd, then the top area is untreated and the bottom area is treated.

Other method for choosing which circular area in each pair receives treatment:

Flip a coin --- Heads → top area gets treatment
 Tails → bottom area gets treatment

