Directions: Do #1-3 on your own paper and #4-6 on this page.
1. We want to test the accuracy of a new type of blood pressure monitor against 2 other already developed monitors. We have 600 subjects, 150 female and 450 male. Create an experiment including how you would choose your sample if:
  a) we use a completely randomized design
  b) we find that gender makes a difference

2. We wish to find out the growth rate of three differently processed corn seeds (and have 1 ton for each type). The plot of land to be used is a 3-acre rectangular site with a river flowing north to south along the west side of the plot. Create an experiment to help decide which type of corn seed has the best growth rate.

3. A manufacturer of boots plans to conduct an experiment to compare a new method of waterproofing to the current method. The appearance of the boots is not changed by either method. The company recruits 100 volunteers in Seattle, where it rains frequently, to wear the boots as they normally would for 6 months. At the end of the 6 months, the boots will be returned to the company to be evaluated for water damage.
  a) Describe a design for this experiment that uses the 100 volunteers. Include a few sentences on how it would be implemented.
  b) Could your design be double blind? Explain.

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4. Flip a coin twice.
  a) What is the sample space?   b) P(HH) =

  c) P(one heads and one tails, in either order) =

5. Roll a regular 6-sided die.
  a) What is the sample space? b) P(rolling a 4) =   c) P(not rolling a 4) =

  d) P(rolling a 5 or greater) =   e) P(rolling a 7) =

  f) P(rolling an even number) =   g) P(rolling a number) =

6. Roll two regular 6-sided dice and find their sum. Draw a diagram to keep track of possible outcomes.
  a) What is the sample space? b) P(sum is 12) =   c) P(sum is 3) =

  d) P(sum is 6 or 7) =   e) P(sum is less than 5) = f) P(sum is not 7) =

  g) P(sum is 36) =   h) P(sum is odd or even) =   i) P(sum is prime) =