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1.   a)   If we use a polygraph machine on many, many people who are telling the truth, the machine will say that about 8% of the people are lying.

       b)   A false positive would mean that a person who is telling the truth is found to be lying. A false negative would mean that a person who is lying is found to be telling the truth.

2.   a)   If we test many, many women with breast cancer, about 10% of the time the test will indicate that the woman does not have breast cancer.

       b)   A false negative, because a woman with breast cancer will not get potentially life-saving treatment. A false positive would result in temporary stress until a more thorough examination is performed.

3.   a)   If we look at many families like this, approximately 25% of them will have a first-born child who develops cystic fibrosis.

       b)   No. The number of children with cystic fibrosis could be smaller or larger than 1 by random chance.

5.   a)   50% because it's a fair coin so it could spin to either side when falling.

       b)   Knock down the coin more times to get more trials.

7.   In the short run, there was quite a bit of variability in the percentage of made free throws. However, this percentage became less variable and approached 0.30 as the number of shots increased.

13.   a)   Let diamonds, spades, and clubs represent making a free throw and hearts represent missing. Deal one card from the deck.
       b)   Let 00-74 represent making the free throw and 75-99 represent missing. Read a two-digit number from Table D.
       c)   Let 1-3 represent the player making the free throw and 4 represent a miss. Generate a random integer from 1-4.

14.   a)   Let 1 and 2 represent green and 3-6 represent red. Roll the die once.
       b)   Let the numbers 1-3 represent green and 4-9 represent red. Ignore 0. Look up one number in the table.
       c)   Let 1 represent green and 2 and 3 represent red. Generate a random integer 1-2.