

First determine the total possibilities there are by multiplying the individual possibilities together: 4 pants x 3 shirts x 2 pairs of shoes = 24 possibilities. Now create a chart showing all the possibilities. An example diagram is shown using P for pants, T for shirts (top), and S for shoes.

P1	P2	P3	P4
T1/S1	T1/S1	T1/S1	T1/S1
T1/S2	T1/S2	T1/S2	T1/S2
T1/S3	T1/S3	T1/S3	T1/S3
T2/S1	T2/S1	T2/S1	T2/S1
T2/S2	T2/S2	T2/S2	T2/S2
T2/S3	T2/S3	T2/S3	T2/S3

© Olympia High School (2004)

49

The correct answer is d. When conducting a survey about a large population the best strategy is to take a random sampling of an unbiased group.

© Olympia High School (2004)

50

The correct answer is d. It is the only choice that is totally random. The other choices are based on something definite or are not arbitrary in any way.

© Olympia High School (2004)

51

To estimate the total number of fish in the lake, you must assume that the second set of fish caught are a representative sample. Out of the 500 in the second set, 175 were tagged which is 35%. You would then assume that the 500 originally tagged fish are 35% of the total fish(F) in the lake, which gives you the equation $0.35 \times F = 500$. Dividing both sides by 0.35 gives you an answer of approximately 1,429 fish.

© Olympia High School (2004)

52

The correct answer is choice b. Since more than half the class scored within the range of 70%-80%, then the median must be in this range. If the other 15 students scored higher than 80%, the 16th score (median score) would be the highest score in the range. If the other 15 scored lower than 70%, then the 16th score would be the lowest in the range. In either extreme the median must be in the range.

© Olympia High School (2004)

53

The correct choice is b. The mean is the highest of the 4 values. To find the mean, add the numbers and divide by the total number of items: $697 / 11$ is approximately 63.4. The mode is the number appearing most: 60. The median is the number which falls in the middle of the set when the items are ordered from least to greatest: 60. The range is the difference between the highest and the lowest numbers of the set: $83 - 50 = 33$.

© Olympia High School (2004)

54