Questions 1 - 3 refer to the following:
Suppose we are interested in the proportion of homes in Cupertino that have a swimming pool. A survey is conducted using a sample of 120 homes from Cupertino.

1. The PARAMETER is
   A. The proportion of all homes in the sample with a swimming pool.
   B. The proportion of all homes in Cupertino with a swimming pool.
   C. The number of all homes in the sample with a swimming pool.
   D. The number of all homes in Cupertino with a swimming pool.

2. The POPULATION is
   A. All homes in the sample with a swimming pool.
   B. All homes in the sample.
   C. All homes in Cupertino with a swimming pool.
   D. All homes in Cupertino.

3. The sample of 120 homes consisted of all homes on 4 randomly selected streets in Cupertino. This is an example of
   A. Cluster sampling.
   B. Simple random sampling.
   C. Stratified sampling.
   D. Systematic sampling.
Questions 4 - 8 refer to the following:
A De Anza instructor is interested in the mean number of classes De Anza students are taking this quarter. She randomly samples 800 De Anza students and asked how many classes they are taking in this quarter. The results are shown in the histogram below.

4. The number of classes a De Anza student is taking this quarter is an example of a:
   A. variable
   B. population
   C. statistic
   D. data value

5. The interquartile range is
   A. 2          B. 2.5          C. 3          D. 3.5

6. The number of people that are taking at least 3 classes is
   A. 440        B. 240        C. 280        D. 520

7. The 60th percentile is best described by which of the following statements?
   A. 60 percent of students are taking at most 2 classes.
   B. 60 percent of students are taking at least 2 classes.
   C. 60 percent of students are taking more than 2 classes
   D. 40 percent of students are taking at most 2 classes.

8. What is the mean of this sample?
   A. 1.0        B. 2.5        C. 2.25        D. 1.5
Questions 9 - 12 refer to the following:
The table below classifies a local coffee shop’s number of sales during one week by type of coffee sold and time of sale.

<table>
<thead>
<tr>
<th>Time Of Sale</th>
<th>Number of Sales By Coffee Type</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bold (B)</td>
<td>Mild (M)</td>
</tr>
<tr>
<td>Morning (M)</td>
<td>350</td>
<td>140</td>
</tr>
<tr>
<td>Lunchtime (L)</td>
<td>260</td>
<td>150</td>
</tr>
<tr>
<td>Afternoon (A)</td>
<td>60</td>
<td>110</td>
</tr>
<tr>
<td>Totals</td>
<td>670</td>
<td>400</td>
</tr>
</tbody>
</table>

9. Find the probability that one randomly selected coffee is a mild coffee sold in the afternoon.
   A. 110/400  B. 110/1420  C. 400/1420  D. 350/1420

10. Find the probability that one randomly selected coffee is either bold OR is sold in the morning.
    A. 350/1420  B. 350/540  C. 1210/1420  D. 860/1420

11. Selling a coffee at lunchtime and selling a decaf coffee are two events that are:
    A. Mutually exclusive only
    B. Independent only
    C. Both mutually exclusive and independent
    D. Neither mutually exclusive nor independent

12. Find the probability that a randomly selected coffee was sold in the morning, given that it was decaf.
    A. 350/540  B. 50/1420  C. 50/350  D. 50/540

13. Suppose that the probability of event A is 0.2 and the probability of event B is 0.4. Also, suppose that the two events are independent. Then P(A|B) is:
    A. 0.2  B. 0.5  C. 0.08  D. 0.4

Questions 14 - 15 refer to the following:
I have 12 socks in a drawer. 4 of them are blue and 8 of them are green. I pull two socks out of the drawer, one after another, without replacement.

14. Find the probability both socks are the same color.
    A. 68/132  B. 80/144  C. 68/144  D. 80/132

15. Find the probability the second sock is blue given the first is green.
Questions 16 - 18 refer to the following:
We are interested in knowing how many books students at De Anza College purchased for their classes this quarter. We conduct a survey of 80 De Anza students. The data are summarized in the table below.

<table>
<thead>
<tr>
<th>Number of Books</th>
<th>Frequency</th>
<th>Relative Frequency</th>
<th>Cumulative Relative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2/80</td>
<td>0.0250</td>
</tr>
<tr>
<td>3</td>
<td>32</td>
<td>32/80</td>
<td>0.4250</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>15/80</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>5/80</td>
<td></td>
</tr>
<tr>
<td>TOTAL:</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. The percentage of students who purchased at least 4 books is:
   A. 57.5%   B. 25%   C. 75%   D. 42.5%

17. The median and the standard deviation of this sample are:
   A. Median is 4, standard deviation is 1.1683.
   B. Median is 4, standard deviation is 1.1757.
   C. Median is 3, standard deviation is 1.1683.
   D. Median is 3, standard deviation is 1.1757.

18. The 75th percentile is:
   A. 3.5   B. 4   C. 4.5   D. 5

Questions 19 – 21 refer to the following:
Let L and M be events, and let P(L) = 0.4, P(M) = 0.5, P(L|M) = 0.4

19. P(L and M) is
   A. 0.2   B. 0.1   C. 0.15   D. 0.4

20. P(L or M) is
   A. 0.9   B. 0.75   C. 0.6   D. 0.7

21. Events L and M are
   A. Mutually exclusive only
   B. Independent only
   C. Both mutually exclusive and independent
   D. Neither mutually exclusive nor independent
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<td>5</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
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Relative Frequency

<table>
<thead>
<tr>
<th>Number of classes</th>
<th>Relative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.50</td>
</tr>
<tr>
<td>2</td>
<td>0.15</td>
</tr>
<tr>
<td>3</td>
<td>0.05</td>
</tr>
<tr>
<td>4</td>
<td>0.20</td>
</tr>
<tr>
<td>5</td>
<td>0.10</td>
</tr>
</tbody>
</table>

17. The number of classes a De Anza student is taking this quarter is an example of a:
   A. variable
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# ANSWER KEY

<table>
<thead>
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