Quantitative Section: Sample Problems

For questions 1-4:

A. Quantity A is greater.
B. Quantity B is greater.
C. The two quantities are equal.
D. The relationship cannot be determined from the information given.

1. Quantity A: 54% of 360 Quantity B: 150
   A  B  C  D

2. Refer to the figure below.

   \[ PQ = PR \]

   Quantity A: The length of PS Quantity B: The length of SR
   A  B  C  D

3. It is given that \( y > 4 \).
   \[ \frac{3y + 2}{5} \]
   Quantity A: \[ \frac{3y + 2}{5} \] Quantity B: \( y \)
   A  B  C  D
4. Quantity A: \( \frac{2^{30} - 2^{29}}{2} \) Quantity B: \( 2^{28} \)

A   B   C   D

5. Which of the following numbers is farthest from the number 1 on the number line?

A. -10
B. -5
C. 0
D. 5
E. 10

6. A car got 33 miles per gallon using gasoline that cost $2.95 per gallon. What was the approximate cost, in dollars, of the gasoline used in driving the car 350 miles?

A. $10
B. $20
C. $30
D. $40
E. $50

7. A certain jar contains 60 jelly beans: 22 white, 18 green, 11 yellow, 5 red, and 4 purple. If a jelly bean is to be chosen at random, what is the probability that the jelly bean will be neither red nor purple?

A. 0.09
B. 0.15
C. 0.54
D. 0.85
E. 0.91

8. Which of the following integers are multiples of both 2 and 3? Indicate all such integers.

A. 8
B. 9
C. 12
D. 18
E. 21
F. 36
9. Each employee of a certain company is in either Department X or Department Y, and there are more than twice as many employees in Department X as in Department Y. The average (arithmetic mean) salary is $25,000 for the employees in Department X and is $35,000 for the employees in Department Y. Which of the following amounts could be the average salary for all of the employees in the company? Indicate all such amounts.

A. $26,000  
B. $28,000  
C. $29,000  
D. $30,000  
E. $31,000  
F. $32,000  
G. $34,000  

10. Which of the following could be the units digit of $57^n$ where $n$ is a positive integer? Indicate all such digits.

A. 0  
B. 1  
C. 2  
D. 3  
E. 4  
F. 5  
G. 6  
H. 7  
I. 8  
J. 9  

11. Rectangle $R$ has length 30 and width 10, and square $S$ has length 5. The perimeter of $S$ is what fraction of the perimeter of $R$?
12. This question is based on the following 3 column table, which summarizes the results of a used car auction. The first row of the table contains column headers. The header for the second column is “Small Cars” and the header for the third column is “Large Cars”. There is no header for the first column. There are 4 rows of data in the table.

<table>
<thead>
<tr>
<th></th>
<th>Small Cars</th>
<th>Large Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cars offered</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>Number of cars sold</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Projected sales total for cars offered (in thousands)</td>
<td>$70</td>
<td>$150</td>
</tr>
<tr>
<td>Actual sales total (in thousands)</td>
<td>$41</td>
<td>$120</td>
</tr>
</tbody>
</table>

For the large cars sold at an auction, which is summarized in the table in figure 7, what was the average sale price per car?

$ \boxed{ }$

13. Working alone at its constant rate, machine $A$ produces $k$ car parts in 10 minutes. Working alone at its constant rate, machine $B$ produces $k$ car parts in 15 minutes. How many minutes does it take machines $A$ and $B$, working simultaneously at their respective constant rates, to produce $k$ car parts?

\boxed{ } minutes
Directions: Questions 14 through 16 are based on the data in the following 3 column table. The table shows the percent change in the dollar amount of sales at five retail stores from 2006 to 2008.

<table>
<thead>
<tr>
<th>Store</th>
<th>Percent Change from 2006 to 2007</th>
<th>Percent Change from 2007 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>+10</td>
<td>-10</td>
</tr>
<tr>
<td>Q</td>
<td>-20</td>
<td>+9</td>
</tr>
<tr>
<td>R</td>
<td>+5</td>
<td>+12</td>
</tr>
<tr>
<td>S</td>
<td>-7</td>
<td>-15</td>
</tr>
<tr>
<td>T</td>
<td>+17</td>
<td>-8</td>
</tr>
</tbody>
</table>

14. If the dollar amount of sales at Store P was $800,000 for 2006, what was the dollar amount of sales at that store for 2008?

A. $727,200  
B. $792,000  
C. $800,000  
D. $880,000  
E. $968,000

15. At Store T, the dollar amount of sales for 2007 was what percent of the dollar amount of sales for 2008? Give your answer to the nearest 0.1 percent.

16. Which of the following statements must be true? Indicate all such statements.

A. For 2008 the dollar amount of sales at Store R was greater than that at each of the other four stores.
B. The dollar amount of sales at Store S for 2008 was 22 percent less than that for 2006.
C. The dollar amount of sales at Store R for 2008 was more than 17 percent greater than that for 2006.