Directions:

Today you will be taking the 4th Grade RAMP mathematics achievement test. You will encounter three types of problems: multiple choice, short answer, and extended response. As you examine each question, please remember:

- **Read** each question carefully and understand what each question asks. Some questions contain figures, graphs, or diagrams that can help you understand the problem.
- You can use the blank space around the multiple-choice questions in addition to grid paper to help you solve the problems.
- When answering a multiple-choice question, select the **one best answer**.
- When completing a short answer or extended response question, please write clearly and neatly. After completing these questions, **reflect on your answer** … Is your answer written neatly? Do you address the question? If your classmates would examine your answer, would they understand it?
- If you do not understand a problem or get “stuck,” move on to another question. After you have answered the questions that you are comfortable with, return to those you skipped.
- After you have completed the test, go back and **check your work**.
1.) Write 0.56 as a fractional sum involving hundredths and tenths.
A.) $\frac{50}{10} + \frac{6}{100}$
B.) $\frac{6}{10} + \frac{5}{100}$
C.) $\frac{5}{10} + \frac{6}{100}$
D.) $\frac{56}{1000}$

2.) Which size container would take the greatest and the least amount of time to fill a bathtub with water?
A.) Quart and cup
B.) Gallon and pint
C.) Pint and quart
D.) Gallon and cup

3.) Juan created an exercise chart that displays his time (in minutes) spent biking and the amount of calories he used.

<table>
<thead>
<tr>
<th>Day</th>
<th>Time (in minutes)</th>
<th>Calories Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>140</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>110</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
<td>190</td>
</tr>
<tr>
<td>4</td>
<td>31</td>
<td>220</td>
</tr>
<tr>
<td>5</td>
<td>37</td>
<td>270</td>
</tr>
</tbody>
</table>

Which statement is true?
A.) Juan used less calories on day 3 than on day 2.
B.) Juan used the most calories on day 4.
C.) The average calories spent per minute for day 1 is 6.5 calories.
D.) The calories used on day 4 is double that of day 2.
4.) Taylor worked an addition problem whose sum was 51,491. Which expression below has the same sum as Taylor’s problem?
A.) \(5 \times 100,000 + 1 \times 10,000 + 4 \times 1,000 + 9 \times 100 + 1 \times 10\)
B.) \(5 \times 10,000 + 1 \times 1,000 + 4 \times 100 + 9 \times 10 + 1 \times 1\)
C.) \(5 \times 1,000 + 1 \times 100 + 4 \times 10 + 9 \times 1 + 1\)
D.) \(5 \times 100 + 1 \times 10 + 4 \times 1 + 91\)

5.) Jacky estimated her grocery bill to be $210.00. What, most likely, was Jacky’s grocery bill?
A.) $201.96
B.) $204.75
C.) $208.25
D.) $217.35

6.) Which fraction in the number pattern below is the first to exceed 2?
\[
\frac{1}{4}, \frac{3}{8}, \frac{9}{16}, \frac{27}{32}, \frac{81}{64}, \frac{243}{128}, \frac{729}{256}, \frac{2187}{512}
\]

7.) Which angle is approximately 90°?
A.) Angle W
B.) Angle X
C.) Angle Y
D.) Angle Z
8.) Which two angles would add up to an obtuse angle?
A.) Angles Z and X
B.) Angles Z and W
C.) Angles X and Y
D.) Angles X and W

9.) Order these fractions from Least to Greatest $\frac{3}{5}, \frac{1}{2}, \frac{3}{4}, \frac{2}{7}, \frac{4}{6}$
A.) $\frac{3}{4}, \frac{3}{5}, \frac{1}{2}, \frac{2}{7}, \frac{4}{6}$
B.) $\frac{2}{7}, \frac{1}{2}, \frac{3}{5}, \frac{4}{6}$
C.) $\frac{2}{7}, \frac{1}{2}, \frac{4}{6}, \frac{3}{5}$
D.) $\frac{3}{4}, \frac{3}{5}, \frac{1}{2}$

10.) If $\frac{3}{4} =$, what does $\frac{3}{2}$ equal? Use simplified fractions.
A.) $\frac{3}{4}$
B.) $\frac{6}{4}$
C.) $\frac{3}{2}$
D.) $\frac{9}{4}$
11.) Which point represents \( \frac{5}{3} \)?

\[ \begin{array}{c}
Y & Z & W & X \\
0 & & & 2
\end{array} \]

A.) W  
B.) X  
C.) Y  
D.) Z

12.) Line segments B and C are parallel and are the same length. What type of line segment that connects the blue dots is needed to create a parallelogram?

A.) No line segment is needed.  
B.) A line segment perpendicular to line segment C.  
C.) A parallel line segment to line segment A.  
D.) A parallel line segment to line segment B.

13.) Todd has 17 fish and 12 rats. Bob has 23 fish and 1 hamster. Susy only has 10 fish. Estimate the total number of animals Todd, Bob, and Susy have.

A.) 60 animals  
B.) 50 animals  
C.) 40 animals  
D.) 30 animals

14.) Tobi the elephant weighs 11,000 pounds. How many tons does Tobi weigh?

A.) 11 tons  
B.) 5.5 tons  
C.) 3.67 tons  
D.) 2.75 tons
15.) Janet sold 320 2-cup servings of lemonade. How many gallons of lemonade did Janet sell?
A.) 80 gallons
B.) 60 gallons
C.) 40 gallons
D.) 20 gallons

16.) Paul bought \( \frac{3}{4} \) of a five-pound ham, \( \frac{1}{5} \) of a three-pound turkey, and \( \frac{2}{3} \) of a two-pound roast beef. What is the best approximation of the total pounds of meat that Paul bought?
A.) 12 pounds
B.) 9 pounds
C.) 6 pounds
D.) 3 pounds

17.) Jan’s swimming pool holds 22,080 gallons of water. Estimate the number of cups needed for Jan to fill her swimming pool.
A.) 50,000 cups
B.) 100,000 cups
C.) 200,000 cups
D.) 400,000 cups

18.) Complete the pattern given the figures below.
19.) If angle A is an acute angle, and angle B is an obtuse angle, then what can be said about the sum of angles A and B?
A.) $90^\circ < \angle A + \angle B < 270^\circ$
B.) $\angle A + \angle B > 270^\circ$
C.) $\angle A + \angle B < 90^\circ$
D.) $\angle A = \angle B$

20.) Estimate the area of the rectangle.
A.) $300 \text{ cm}^2$
B.) $450 \text{ cm}^2$
C.) $600 \text{ cm}^2$
D.) $750 \text{ cm}^2$

21.) Examine the two polygons below to discover which statement is true.
A.) Perimeter (A) > Perimeter (B)
B.) Volume (A) < Volume (B)
C.) Perimeter (B) > Perimeter (A)
D.) Area (A) > Area (B)
22.) Tobi lives on a street that is perpendicular to the railroad tracks. He does not live on the intersection of two streets. Based on the picture below, what street does Tobi live on?
A.) Turnpike Lane  
B.) Main Street  
C.) South Drive  
D.) The street Tobi lives on is not listed.

23.) Round 38,725 to the nearest thousand.
A.) 40,000  
B.) 39,000  
C.) 38,730  
D.) 38,700

24.) Joni made the pattern shown below
\[ \frac{7}{100}, \frac{22}{100}, \frac{37}{100}, \frac{52}{100} \]

What are the next three numbers?
A.) .64, .76, .88  
B.) .67, .79, .91  
C.) .67, .82, .97  
D.) .64, .79, .94

25.) Estimate 150°F in Celsius given the diagram.
A.) 10°C  
B.) 30°C  
C.) 70°C  
D.) 90°C
26.) Five students pooled their money together to order a large circular pizza. They wanted to evenly divide the pizza among each other. What percentage of the pizza would each student get? Hint: You may want to convert the fractions to their equivalent percentages.

A.) \( \frac{15}{100} \)

B.) \( \frac{20}{100} \)

C.) \( \frac{25}{100} \)

D.) \( \frac{30}{100} \)

27.) Use Figure 1 to answer the following question: What statement appears to be true of the two line segments that intersect at point C?

A.) The two line segments are perpendicular.

B.) The two line segments are parallel.

C.) The two line segments form \( \angle BCD \), which is an obtuse angle.

D.) The two lines form \( \angle BCD \), which is an acute angle.

![Figure 1](image-url)
28.) Find the missing values for the numeric pattern below.

0.00025, 0.0025, 0.025, ■, ■, ■

A.) \( \frac{25}{10,000}, \frac{25}{1,000}, \frac{25}{100} \)

B.) \( \frac{25}{1,000}, \frac{25}{100}, \frac{25}{10} \)

C.) \( \frac{25}{100}, \frac{25}{10}, \frac{25}{1} \)

D.) \( \frac{25}{10}, \frac{25}{1}, 250 \)

29.) The pie chart below shows how 400 people answered a question about which was their favorite dessert. How many more people liked ice cream than cake? Please explain your reasoning.
30.) Four students shaded figures to represent part-to-whole relationships. Which figure or figures could not represent \( \frac{1}{3} \)? Please explain your reasoning.

![Shaded figures](image)

31.) Shade \( \frac{2}{3} \) of the rectangle composed of unit squares, and justify why it represents \( \frac{2}{3} \).

![Shaded rectangle](image)

32.) An auditorium contains 178 chairs. If the principal wanted rows to each have 15 chairs, how many chairs would the principal need to add to the auditorium in order to have 12 equal rows of chairs? Please explain your reasoning.
33.) Herald’s rectangular garden covers 12 square meters. List two possible dimensions of Herald’s garden and find the perimeter of each. Please explain your reasoning.

34.) Sam is celebrating his birthday today at the movie theatre. Upon arriving, Sam has to make a choice about what kind of movie, snack, and refreshment to get. There are two movies, three snacks, and three types of refreshment to choose from. How many combinations of a movie, snack, and refreshment can Sam choose from? Please explain your reasoning.

35.) If equals 1 unit of area and , find the area of the shaded figure on the grid below and justify your answer.
36.) Jan has a garden that is eight rows wide. One-half of the garden is for vegetables, while the rest is meant for flowers. If each row contains 10 plants, how many vegetables are in Jan’s garden? Please explain your reasoning.

37.) Examine the two expressions, $M$ and $N$, to determine a relationship (=, <, >) between them and justify your work

$$M: \frac{9}{10} + \frac{6}{100} + \frac{7}{1,000} \quad \& \quad N: \frac{967}{1,000}$$

38.) Explain how to find the missing measurement of $\angle EBD$. 

$$m(\angle ABE) = 45^\circ$$

$$m(\angle DBC) = 15^\circ$$
39.) Label the angles as acute, obtuse, or greater than 180 degrees, and explain your reasoning.

40.) Sue, Bob, Tim, and Charley ordered a large pepperoni pizza for dinner. They decided to split the pizza by how much each person paid. Sue, Bob, Tim, and Charley paid $\frac{2}{5}$, $\frac{1}{8}$, $\frac{9}{40}$, and $\frac{1}{4}$ of the full price of the pizza respectively. Put the four people in order based on how much they paid for the pizza, starting with who paid the smallest amount. Please explain your reasoning.
41.) The shaded region below represents Angie’s flower bed. What is the perimeter and area of Angie’s flowerbed? Please Justify.

42.) What is the sum of the three line segments on the graph if each square has length of one-third? Please explain your reasoning.
43.) Measure the following angles $\alpha, \beta,$ and $\gamma$ with your protractor, and write a relationship involving $\alpha, \beta,$ and $\gamma$. Please explain your reasoning.

44.) Find the perimeter of the net created by the rectangular prism and explain your method.
45.) If one starts counting blocks at Level 1, at what level does the total number of blocks exceed 24? Explain your answer.

46.) Bob and Tom wanted to paint a square-shaped living room and ceiling with side length 10 feet. The living room contains two 3′×2′ windows and one 8′×3′ glass door. Explain and determine the total painting area. Furthermore, if one gallon of paint covers 250 square feet, how many gallons of paint will Bob and Tom need to buy if two coats of paint are used? Please explain your reasoning.

47.) Simplifying the equation, \( y = 20 + 7 - 6(5 + 4)2 + 3 \), using the order of operations. Please show your steps.