Name __________________________

This summer packet will count as your first grade for Math 7. All responses are to be recorded on the Answer Sheet. Make sure to show all your work for full credit.

Let’s start off the year right!

We look forward to meeting you! 😊
Part 1 – Multiple Choice Responses. Be sure to clearly indicate an answer for each question. Show your work in the space provided in your answer packet.

1. What is the greatest common factor of 16 and 28?
   A. 2  
   B. 3  
   C. 4  
   D. 112

2. Which number is a factor of 44?
   A. 8  
   B. 11  
   C. 14  
   D. 24

3. Which is the prime factorization of 160?
   A. $1 \times 2 \times 2 \times 2 \times 2 \times 5$  
   B. $2 \times 2 \times 2 \times 10$  
   C. $2^4 \times 5$  
   D. $2 \times 2 \times 2 \times 2 \times 2 \times 5$

4. How would you write $8 \frac{2}{3}$ as an improper fraction?
   A. $\frac{13}{3}$  
   B. $\frac{26}{3}$  
   C. $\frac{22}{3}$  
   D. $\frac{24}{3}$

5. There are 30 students doing an experiment in science class. If $\frac{2}{5}$ of the students are measuring the chemicals for an experiment, what percent are not measuring chemicals?
   A. 12%  
   B. 18%  
   C. 40%  
   D. 60%

6. Which fraction is NOT equivalent to $\frac{12}{20}$?
   A. $\frac{36}{60}$  
   B. $\frac{3}{4}$  
   C. $\frac{6}{10}$  
   D. $\frac{9}{15}$

7. Sunnyside Middle School has ten sixth grade classes. Two of the classes have both band and chorus. What percent of the sixth grade classes have both band and chorus?
   A. 2%  
   B. 10%  
   C. 20%  
   D. 40%

8. An airplane flew at an average speed of 432 miles per hour for two and a half hours. How far did the plane fly?
   A. 10.8 miles  
   B. 108 miles  
   C. 1,080 miles  
   D. 10,800 miles

9. Polygon ABCD below is a rectangle. The lengths AD and DE are equal. What is the measure of angle DAE?

   A. 90°  
   B. 40°  
   C. 45°  
   D. 100°
10. The polygon below is a regular pentagon. Which expression represents the perimeter of the pentagon?

![Pentagon Diagram]

A. $5 \cdot s$  B. $s + 5$  C. $s + s + s + s$  D. $s \cdot s$

11. Sherry needs 3 cups of flour for a recipe. She could only find $\frac{1}{4}$ cup measuring cups. How can she figure out how many times she must fill the measuring cup to get the required amount of flour?

A. Add 3 and $\frac{1}{4}$  B. Subtract $\frac{1}{4}$ from 3  C. Multiply 3 by $\frac{1}{4}$  D. Divide 3 by $\frac{1}{4}$

12. Which math sentence is in the same fact family as:

$$X \cdot Y = Z$$

A. $Z \cdot Y = X$  B. $Z \cdot X = Y$  C. $Y \div Z = X$  D. $Z \div Y = X$

13. Alan is cooking apple pies. He uses $10\frac{5}{8}$ pounds of apples to bake all of the pies. He also uses 5% pounds of apples to make applesauce. How many more pounds of apples does he use for the pies as compared to the applesauce?

A. $5\frac{1}{8}$  B. $5\frac{2}{8}$  C. $15\frac{1}{8}$  D. $15\frac{5}{8}$

14. There are 32 students in Ms. K’s homeroom. Of the students, $\frac{3}{6}$ are boys. How many boys are in her homeroom?

A. $6\frac{1}{8}$  B. $8\frac{1}{8}$  C. 12  D. 14

15. Justine has a bag with 12 blue marbles, 6 green marbles, 8 purple marbles, and 4 red marbles. If she wants a probability of picking a blue marble to be 50%, what should Justine do?

A. Add 2 green, 2 purple, and 2 red marbles  
B. Add 2 blue marbles  
C. Remove 1 green, 1 purple, and 1 red marble  
D. Add 6 blue marbles

16. When Branden deposits a penny in his gumball machine, out comes a gumball. Inside the machine he has 6 blue, 6 red, 6 yellow, and 6 white gumballs. What are the chances he will get a blue gumball?

A. 1 out of 24  B. 1 out of 6  C. 1 out of 4  D. 1 out of 12
17. A penny is tossed and a number cube is rolled. How many different outcomes are possible?

A. 1  B. 8  C. 12  D. 64

18. A tire on Edward’s car has a radius of 20 inches. What is the circumference of the tire to the nearest inch?

A. 1,256 in.  B. 63 in.  C. 126 in.  D. 400 in.

19. What is the area of the triangle below?

A. 18 m²  B. 36 m²  C. 9 m²  D. 6 m²

20. What is the area of the shaded region?

A. 21π in²  B. 9π in²  C. 29π in²  D. 31π in²

21. Mahina measured the diameter of a circle to be 6.5 inches. What is the circumference of that circle to the nearest inch?

A. 39 in  B. 40 in  C. 20 in  D. 36 in

22. The chart below shows the number of points Julie served in her first 6 volleyball games. Which is the BEST prediction for the points she will serve in game 7?

<table>
<thead>
<tr>
<th>Game</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>Points</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>4</td>
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</table>

A. 12 points  B. 2 points  C. 6 points  D. 4 points
23. Two coins are tossed. Alan gets a point if the coins match and Sondra gets a point if they do not match. Which of the following statements are true?

A. Alan is more likely to win.  
B. Sondra is more likely to win.  
C. Alan and Sondra have the same chance of winning.  
D. Sondra can never win.

24. If the width of a rectangle is tripled, what will be the effect on its area?

A. The area will remain the same.  
B. The area will be 9 times as big.  
C. The area will be 3 times as big.  
D. The area will be 6 times as big.

25. In a survey of 100 people, 25 chose pineapple to be their favorite pizza topping. What is the chance that a person picked at random prefers pineapple as their favorite pizza topping?

A. 1 out of 5  
B. 1 out of 4  
C. 1 out of 2  
D. 1 out of 12

26. Lisa has a set of 10 cards, numbered 1 through 10. If she picks a card at random, what is the probability that the card will be a factor of 8?

A. 80%  
B. 20%  
C. 40%  
D. 50%

27. Find the value of N:

\[ 0.80 \times N = 0.20 \]

A. 0.25  
B. 0.16  
C. 4  
D. 0.60

28. The circumference of a circle is \( 12\pi \) cm. What is the area of that circle?

A. \( 144\pi \) cm\(^2\)  
B. \( 36\pi \) cm\(^2\)  
C. \( 24\pi \) cm\(^2\)  
D. \( 12\pi \) cm\(^2\)

29. A triangle has interior angles equal to 55°, 70°, and \( x^\circ \). What is the value of \( x\)?

A. 180°  
B. 125°  
C. 55°  
D. 35°

30. A square has an area of 25 m\(^2\). What is the perimeter of this square?

A. 100 m  
B. 50 m  
C. 20 m  
D. 10 m
Part 2 – Short Answer Responses. Be sure to write your answer on the line provided for each question. Show your work without using a calculator in the answer packet to receive credit for your answers.

31. How many bows can you make from \( \frac{3}{3} \) meters of ribbon if a bow takes \( \frac{1}{4} \) meter of ribbon?

32. Gloomy Toothpaste comes in two sizes: 9 ounces for $0.89 and 12 ounces for $1.15. Which tube size is the better buy?

33. There are 28 students in a math class, 16 of which are male. What percent of the class is male? What percent of the class is female?

34. Rewrite each of the following statements as a FRACTION in simplest form, a DECIMAL, and a PERCENT:
   a. 30 days out of 100 days
   b. 20 correct out of 25 problems
   c. 3 out of 4 games won
   d. 21 out of 40 mountain bikes

35. A local newspaper sells advertising space. It charges according to how much of the page is used to print the ad. A new restaurant owner bought two \( \frac{1}{5} \) page ads, nine \( \frac{1}{20} \) page ads, and five \( \frac{1}{4} \) page ads. What is the total space that the owner bought for advertisements?
Part 3 – Open Ended Responses. Be sure to read each question carefully. Respond to all parts of the problem in the appropriate spaces in your answer packet.

36. Fifty students in King Middle School were surveyed about their favorite sandwich. The results of the survey are below:

<table>
<thead>
<tr>
<th>Sandwich Preferences</th>
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<tbody>
<tr>
<td>Peanut Butter</td>
<td>32</td>
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<tr>
<td>Bologna</td>
<td>10</td>
</tr>
<tr>
<td>Cheese</td>
<td>7</td>
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<tr>
<td>Tuna Fish</td>
<td>1</td>
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</tbody>
</table>

a. If a student is picked at random from the school, what is the probability that he student’s favorite sandwich is peanut butter? Express your answer as a ratio in simplest form.

b. If a student is picked at random from the school, what is the probability that the student’s favorite sandwich is NOT bologna? Express your answer as a percent.

c. If there are 550 students in the school, how many would you expect to say that cheese is their favorite sandwich?

37. Italiano’s Pizza serves pizzas with diameters of 12 inches, 14 inches, and 16 inches.

a. How many square inches are in a 12 inch pizza?

b. How many more square inches are in a 14 inch pizza than a 12 inch pizza?

c. DaVinci’s pizza serves a large square pizza with 15 inch sides. Does this give more or less pizza than Italiano’s large 16 inch diameter pizza? How much more or less?
# Multiple Choice

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<th>Work</th>
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