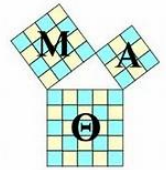Name:_____

School:_____

Grade:_____

Round 2: Multiple Choice Test

Rules:

1. You will have 60 minutes to complete the exam.

2. The exam consists of 30 problems each with four choices.

3. Each correct answer is worth 6 points and **there is NO penalty for guessing** so you should answer every problem!

4. No calculators, phones, smartwatches, or any other aids are allowed during the test.

5. If you finish before time is called, review your answers. When time is called, stop and put your pencil down. You may not answer any more questions after this point.

6. Figures are not necessarily drawn to scale.

7. Be sure to transfer your answers to your scantron. We will collect the scantron but you are free to keep this multiple choice test.

8. Do all of your work on your test, but if you need additional scratch paper or a pencil during the test, please raise your hand.

9. At this time, please be sure your name, grade, and school is on this test as well as on your scantron sheet.

Multiple Choice Test:

1. Jack ate 5/8 of a pizza, and Jordan ate 1/4 of the same pizza. What fraction of the pizza did Jack and Jordan eat?

    A. ½   B. ¾   C. ⅞   D. the whole pizza

2. Evaluate the following expression, writing your answer as an improper fraction:
2+6/72*2/24

    A: 25/12   B: 25/144   C:289/144   D:1/12

3. Jim has paid 50 cents for 3 pens and 2 pencils. He also paid 31cents for 2 pens and one pencil. Assuming both products have kept the same price, how much is a pencil worth?

    A: 12 cents   B: 7 cents   C: 4 cents   D: 9 cents

4. How many different combinations of dimes, nickels, pennies, and quarters can total to 15 cents?

    A:6   B:7   C:4   D:9

5. My older brother is 8 years older than I am, and the sum of our ages is 20. How old is my brother?

    A: 8   B: 10   C: 12   D: 14

6. A square has a perimeter of 40 cm. What is the area of a square with double the perimeter?

    A: 1600   B: 80   C: 100   D: 400

7.   A cube has sides that measure 6 cm each. What is the surface area of the cube?
   A: 36   B: 216   C: 18   D: 144

8. Bob slices 3/8 of a cake and gives the slice to his sister. Then his sister eats exactly 8/17 of the slice. How much of the total cake did Bob's sister eat?
A: 51/64   B: 5/17   C: 3/17   D:13/64

9. Find the area of the following figure (the drawing is not to scale):

2 cm

1 cm
1.5 cm

2cm

3 cm

1 cm

7.5 cm
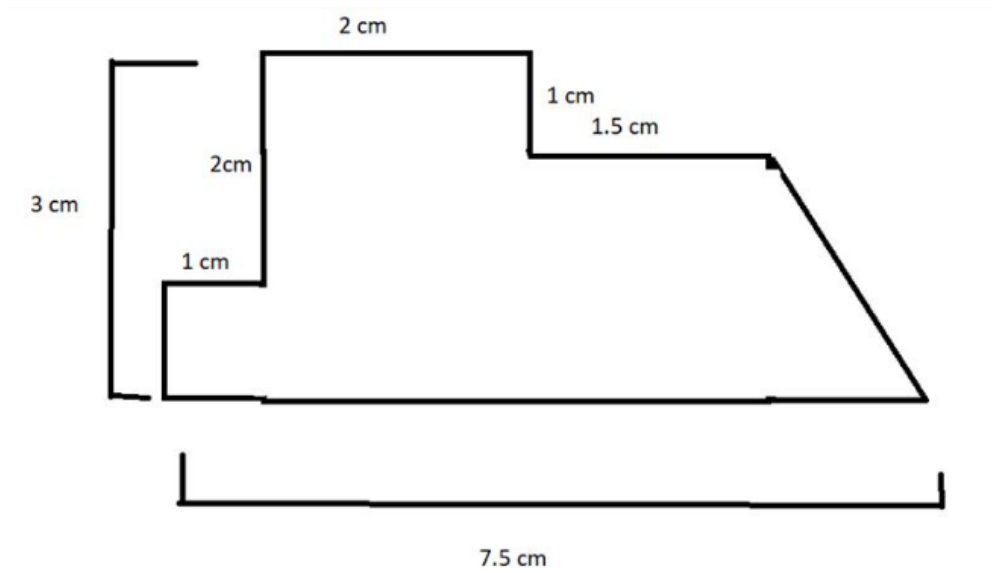
A: 11.5 cm   B: 10 cm   C:13 cm   D: 11 cm

10. Jack is playing a game where he repeatedly rolls a pair of fair, six-sided dice. He wins the game if he rolls doubles. What is the chance that he rolls doubles in the first three rolls of the dice?

A. $\frac{5}{36}$ B. $\frac{91}{216}$ C. $\frac{1}{6}$ D. $\frac{25}{216}$

11. Evaluate the following expression, writing your answer in the simplest form:
5/13 + (7/3 - (6/7 - 8/7)) =

A. 410/137   B. 766/432   C. 820/273   D. 978/300

12. Ananya is at a pizza shop that sells circular pizzas. She can either buy 4 small pizzas, 2 medium pizzas, or 1 large pizza. A small pizza is 5 cm in diameter, a medium pizza is 7 cm in diameter, and a large pizza is 11 cm in diameter. Ananya wants to buy the most pizza possible to share with her friends. If she can only choose one of these three options, what is the maximum area of pizza she can buy? Note: The formula for an area of a circle is πr^2, with r being the radius of the circle. The radius is equal to ½ the diameter.
A: 30.25 cm²   B: 25 cm²   C: 24.5 cm²   D: 35.25 cm²

13. Find the next number in the sequence:
-4, 5, 14, 23, 32, ...

A. 41   B. 39   C.40   D.29

14. Zechariah wants to buy a birthday present for his brother. He finds a set of legos that originally cost R dollars but finds out the price has been marked down by 20%. How much did the set of legos originally cost if Zechariah paid $25 for the set?
A.   32.50   B. 31.25   C. 27.25   D. 25.20

15. Shreya moves two miles north from (0,0) to (0,2) in 2 minutes. What is Shreya's speed in miles per hour? (There are 60 minutes in an hour)

A.1   B. 6   C. 100   D. 60

16) Compute the following:

$$\frac{11}{4} \cdot \frac{2}{5} \cdot \frac{3}{6} \cdot \frac{4}{7} \cdot \frac{5}{8} \cdot \frac{6}{9} \cdot \frac{7}{10} \cdot \frac{8}{11} = ?$$

A. 2/15   B. 1/99   C. 11/2   D. 1/15

17. What is 42% of 10?
A. 5.1   B. 5.0   C. 5.3   D. 4.2

18. What is the greatest prime number between 1through 10?
A. 10   B. 9   C. 8   D. 7

19. Lauren can grade $\frac{5}{8}$ of a calculus test in 25 minutes. How many calculus tests can she grade in 1 hour?
A: 5   B: 8   C: 2.5   D: 1.5

20. In a jar of yellow, orange, and black marbles, all but 4 are yellow marbles, all but 12 are orange, and all but 6 are black. How many marbles are in the jar?
A.   11   B. 22   C. 33   D. not enough information

21. A can is halfway filled with water. If the height of the can is 4 cm and the can's cap has an area of 16π, how much water is in the cylinder.
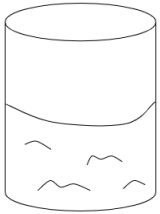
A. $64\,\pi$ B. $16\,\pi$ C. $24\,\pi$ D. $32\,\pi$

22. If a @ b = a/b + b/a   then what is the value of (3@4)@5 ?
A.   169/60   B. 3/20   C. 12/5   D. 1

23. Square ABCD has an area of $36\,\text{m}^2$. DE = 2EC. What is the ratio of the area of $\triangle$ BED to the area of square ABCD? Express your answer as a common fraction.

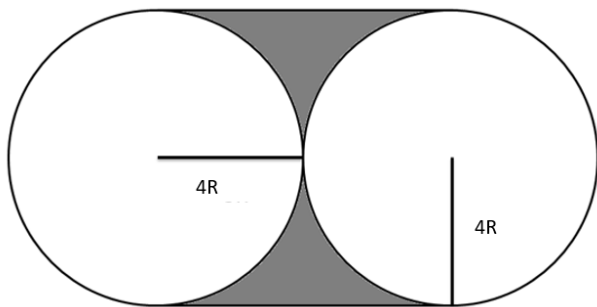A.   ¼   B. ⅓   C. ½   D. ⅔
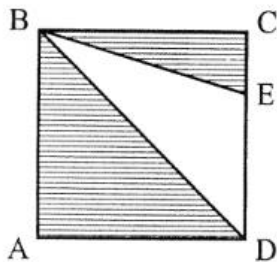
24. How many ways are there to arrange the letters in the word SAVVY?

A.   10   B. 60   C. 120   D.   240

25. If the radii of the two circles below are each 4R, then what is the area of half the shaded region?

A. $\pi (4R)^2$ B. $8R^2(4-\pi)$ C. $16R^2(4-\pi)$ D. $\pi (4R)^2 - \frac{1}{2}(4R)$

26. Consider the following sequence: 1, 3, 7, 15... What is the next item in the sequence?
A.17   B. 30   C. 31   D. 225

27. What is $(-4a^4)^3$ equivalent to?

A. $12a^{12}$ B. $64a^7$ C. $-4a^{12}$ D. $-64a^{12}$

28. Bartholomew is baking perfectly spherical cupcakes. She wants to find the surface area of the sphere for fun. If the formula is $4\pi r^2$, and 9 times the diameter of the sphere is 36, find the surface area of the cupcake.

A.   25π   B. 16π   C.36π   D. 144π

29. How many square units bigger is 5x5 square than a 4x4 square?

A.   9   B. 14   C. 8   D. 6

30.   One angle in a triangle measures 41 degrees. The second angle is 3 degrees less than double the first angle. What is the measure of the third angle?

A.   60 degrees   B. 79 degrees   C. 120 degrees   D. 240 degrees