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Saturday, March 14th

March Mathness, 5th Grade

(Duration: 30 minutes)

Last Name: _____ First Name: _____

Grade: _____

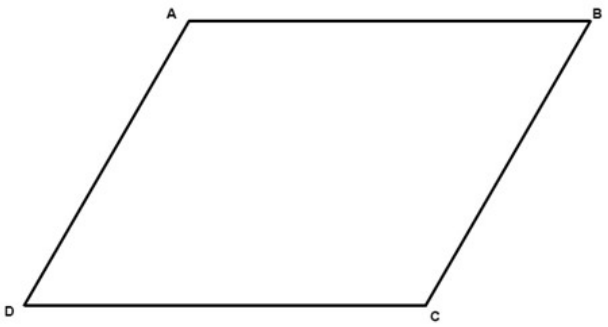
Instructions:

1. DO NOT BEGIN UNTIL YOUR PROCTOR INSTRUCTS YOU TO DO SO.
2. This is a 25 question multiple choice test. Each question is followed by answers marked A, B, C, and D. Only one of these is correct.
3. A **tiebreaker** consisting of 5 additional questions will follow the test. These questions do not count toward your score. However, in the event of a tie, the competitor who answers more tiebreaker questions correctly will receive the higher ranking.
4. Circle your answer. Erase any stray marks and do not circle multiple answers to one question. Only answers properly marked on the test form will be graded.
5. There is **no penalty** for guessing. Your score on this test is the number of correct answers.
6. **No aids** are permitted other than scratch paper and erasers. No problems on the test will require the use of a calculator.
7. Before beginning the test, your proctor will ask you to record certain information on the answer form.
8. When your proctor gives the signal, begin working on the problems. You will have **30 minutes** to complete the test.
9. If you complete the problems before time is called, use the remaining time to check your answers.
10. Remember that this is designed to be different from math tests in school. A score of 50% on this test is considered excellent, so don't be discouraged if you don't know how to solve the problem.

1. Which fraction is the largest?

   (A) $\frac{2}{5}$ **(B)** $\frac{1}{2}$ **(C)** $\frac{9}{20}$ **(D)** $\frac{4}{10}$

2. If line segment AB is 54 cm and the height of the parallelogram is 32 cm, what is the area of the parallelogram in cm^2?



   (A) $1,998$ **(B)** $1,184$ **(C)** $1,728$ **(D)** 864

3. For 2 hours and 30 minutes, a car travels 55 miles per hour (mph). For 2 more hours, it travels 65 mph. What is the total distance traveled in miles?

   (A) 137.5 **(B)** 130 **(C)** 267.5 **(D)** 270

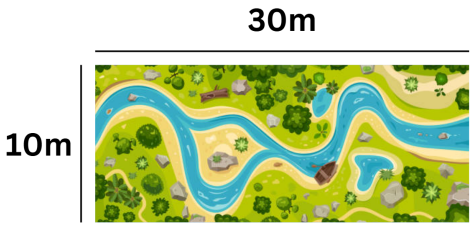
4. Katie wants to buy a new backpack for school, so she begins saving. She puts aside \$5 the first week and \$3 the next. She is able to keep up this pattern, where she saves \$5 one week and \$3 the next. At least how many weeks will it take to save up for a \$35 backpack?

   (A) 8 **(B)** 9 **(C)** 10 **(D)** 7

5. David's mom gave him 10 sandwiches before he left for school. During lunch, David gave 2 sandwiches to Max, 1 sandwich to Ava, and 3 sandwiches to Sam. How many sandwiches does David have left?

   (A) 3 **(B)** 5 **(C)** 7 **(D)** 4

6. Sophie decides to walk around a park as shown in the image. This park is 30 meters in width and 10 meters in length. If she decides to walk around the park exactly one time, how many meters will she walk?



   (A) 60 **(B)** 30 **(C)** 80 **(D)** 50

7. How many different 3-letter arrangements can be made using the letters A, B, and C?

   (A) 3 **(B)** 6 **(C)** 9 **(D)** 27

8. A train travels 60 miles per hour. How many miles does it travel in 2.5 hours?

   (A) 120 **(B)** 125 **(C)** 150 **(D)** 180

9. Four students — Maya, Noah, Olivia, and Liam — each choose a different favorite subject: Math, Science, History, or Art. Maya does not like Art. Noah likes History. Olivia does not like Art or Math. Who likes Math?

   (A) Maya **(B)** Noah **(C)** Olivia **(D)** Liam

10. There is a geometric sequence: 3, 6, 12, 24, ___, ___. What are the next two numbers?

    (A) 48, 69 **(B)** 36, 48 **(C)** 36, 96 **(D)** 48, 96

11. John took $\frac{2}{7}$ of the pie. Anne took $\frac{3}{14}$ of the pie. Charlie took $\frac{1}{7}$ of the pie. How much pie is left?

    (A) $\frac{2}{14}$ **(B)** $\frac{2}{7}$ **(C)** $\frac{5}{14}$ **(D)** $\frac{5}{7}$

12. It takes 20 beads to make one bracelet. A new order has come in for 4 bracelets, but the same customer then cancels 2 bracelets. How many beads would you need for the new order?

    (A) 30 **(B)** 40 **(C)** 20 **(D)** 80

13. Which equation is equivalent to $(10 \times 2)^2 + 5$?

    (A) $12^2 + 5$ **(B)** $15^2 + 5$ **(C)** $20^2 + 5$ **(D)** $40^2 + 5$

14. Lily has a habit of clicking her pen at a rate of 5 clicks per minute. If she clicks her pen for a whole class period of 30 minutes, what is the total number of clicks?

    (A) 150 clicks **(B)** 35 clicks **(C)** 100 clicks **(D)** 125 clicks

15. Sharon finds a magic coin on the ground. For every 3 coin flips, the coin always lands on heads exactly twice. What is the probability of the coin landing on tails if Sharon flips it once?

(A) $\frac{1}{4}$ **(B)** $\frac{2}{3}$ **(C)** $\frac{2}{5}$ **(D)** $\frac{1}{3}$

16. The volume of an object can be found using the formula $V = \frac{1}{3}s + 2$, with s representing the length of the object's side. Use the given formula to solve for s.

(A) $s = 3V - 2$ **(B)** $s = V - 2$ **(C)** $s = 3V - 6$ **(D)** $s = V - 6$

17. When using the digits 1, 2, 3, 4 exactly once to form a 4-digit number, how many different even numbers can you make?

(A) 6 **(B)** 12 **(C)** 18 **(D)** 24

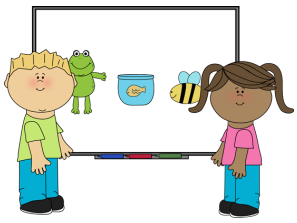
18. What time will it be 11 hours and 20 minutes after the time shown on the clock below?

(A) 2:20 **(B)** 9:30 **(C)** 1:10 **(D)** 2:10

19. Jenna has picked a two-digit number whose digits add up to 11. When these digits are reversed, the new number is 27 larger than Jenna's original number. Find the original number.

    (A) 38 **(B)** 56 **(C)** 47 **(D)** 74

20. A school has 40 classrooms, and each classroom needs a smartboard. If one smartboard costs \$1,000, and the school budget is \$50,000, how much budget will be left after getting all 40 classrooms a smartboard?



    (A) $\$5,000$ **(B)** $\$10,000$ **(C)** $\$2,000$ **(D)** $\$1,000$

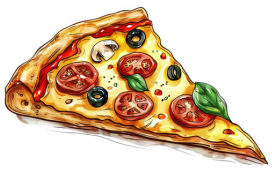
21. What is the sum of the first 50 odd numbers, starting with 1?

    (A) $2,500$ **(B)** $5,000$ **(C)** $13,579$ **(D)** $25,000$

22. If Bob can mow 2 yards in 3 hours and Joe can mow 1 yard in 1 hour, how many hours will it take for them to mow 10 yards working together? All the yards are the same size.

    (A) 1 **(B)** 2 **(C)** 3 **(D)** 6

23. A pizza shop sells pizzas with choices of a topping, sauce, and cuts. You can choose toppings of pepperoni, sausage, pineapple, or none. You can choose sauce options of red sauce, alfredo, or pesto. The pizza can also be cut into 6, 8, or 12 slices. How many different orders of pizza can you make?

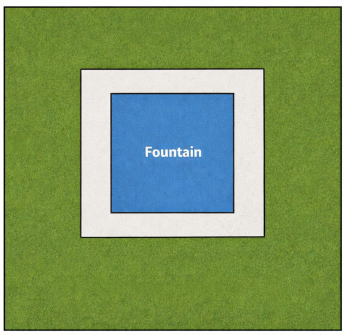


    (A) 63 **(B)** 10 **(C)** 36 **(D)** 24

24. Jihyo writes the integers from 1 to 100 on a board. She erases every number that is a multiple of 3 or 5, but she does not erase numbers that are multiples of both 3 and 5. How many numbers remain on the board? *(null due to misprint)*

    (A) 53 **(B)** 54 **(C)** 55 **(D)** 56

25. Mr. McCray has a large square garden with a side length of 24 meters. Inside the garden, a square fountain with a side length of 8 meters is placed exactly in the center. Around the fountain, there is a path that is 2 meters wide on all sides, and the rest of the garden is covered with grass. What is the area, in square meters, of the grassy region? *(null due to misprint)*



    (A) 288 **(B)** 320 **(C)** 336 **(D)** 384

TIEBREAKER: These questions do not count toward your score. However, in the event of a tie, the competitor who answers more tiebreaker questions correctly will receive the higher ranking.

1. A rectangular sandbox in the RBHS playground has a perimeter of 60 units. The length is 6 units longer than the width. What is the area of the sandbox?

   (A) 202 units^2 **(B)** 216 units^2 **(C)** 202 units^3 **(D)** 216 units^3

2. Find the missing number in the sequence: 2, 6, 7, 21, 22, 66, 67, ___

   (A) 68 **(B)** 70 **(C)** 198 **(D)** 201

3. If only nickels, dimes, and quarters are available, how many different ways are there to choose a combination of coins totaling 45 cents?

   (A) 3 **(B)** 5 **(C)** 8 **(D)** 10

4. Sally is down with a cold; she has used 480 boxes of tissues in 4 days. Each box of tissue contains 200 tissues. On average, how many tissues did Sally use per minute?

   (A) 15 **(B)** 16.7 **(C)** 18 **(D)** 19.4

5. A ladder 20 meters long leans against a vertical wall. The top of the ladder reaches a point on the wall that is 4 meters higher than the distance from the wall to the base of the ladder. How far is the base of the ladder from the wall?

   (A) 11 meters **(B)** 12 meters **(C)** 14 meters **(D)** 16 meters