2024 MATHLETES CHALLENGE

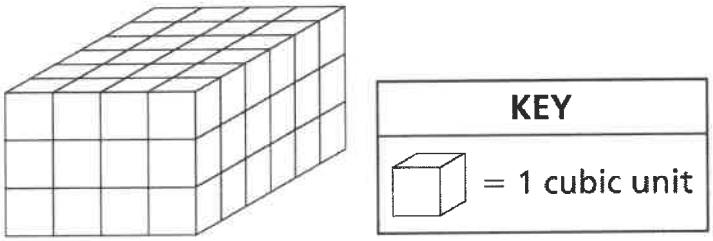
ROUND 1
TEST 2

February 6, 2024

TEAM NAME

2024 Mathletes Challenge - Round 1 - Test 2

1. A diagram of a right rectangular prism made of unit cubes is shown below.



What is the volume, in cubic units, of the right rectangular prism?

A 13

B 24

C 60

D 72

---

2. There are 210 apples placed equally into 14 boxes. How many apples are in each box?

A 12

B 14

C 15

D 21

3. Diane walks $3\frac{3}{8}$ miles on Saturday. She walks $1\frac{5}{6}$ fewer miles on Sunday than she does on Saturday. How many miles does Diane walk on Sunday?

A $1\frac{13}{24}$

B $2\frac{11}{24}$

C $2\frac{13}{24}$

D $5\frac{5}{24}$

---

4. Which statement about a rhombus and a square is always true?

A Both shapes are parallelograms that have four equal sides.

B Both shapes are parallelograms that have four right angles.

C Both shapes are quadrilaterals with exactly two acute angles.

D Both shapes are quadrilaterals with exactly one pair of parallel sides.

---

5. A cook in a restaurant has 13 gallons of milk. How much milk, in quarts, does the cook have?

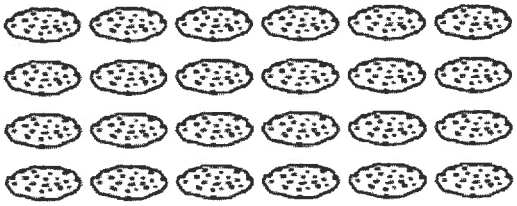
A 17

B 26

C 42

D 52

6. Lily made some cookies, as shown.



Lily made 2 times as many cookies as Tommy made. How many cookies did Tommy make?

○ A. 12

○ B. 24

○ C. 36

○ D. 48

---

7. Diego solved math problems each day for one week.

- On the first day, he solved 10 math problems.
- On the second day, he solved 15 math problems.
- On the third day, he solved 20 math problems.

Each day, Diego continued to solve 5 more math problems than the day before. On which day did he solve 35 math problems?

○ A. the fourth day

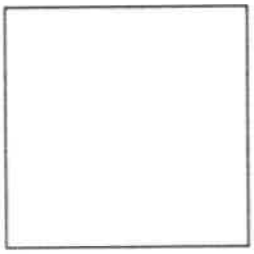
○ B. the fifth day

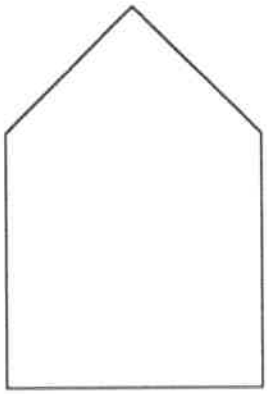
○ C. the sixth day

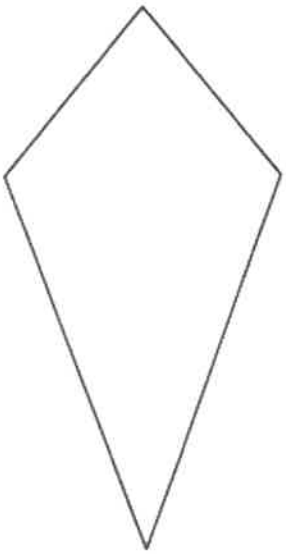
○ D. the seventh day

8. Which of these shapes appears to be a quadrilateral with perpendicular sides?

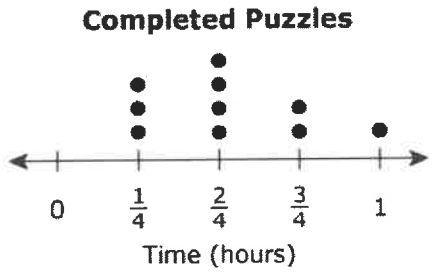
○ A. 

○ B. 

○ C. 

○ D. 

9. This dot plot shows the amounts of time, in hours, it took a student to complete ten different puzzles last week.



The three puzzles that took the greatest amount of time were completed by the student on Saturday.

What was the total amount of time, in hours, it took the student to complete the three puzzles on Saturday?

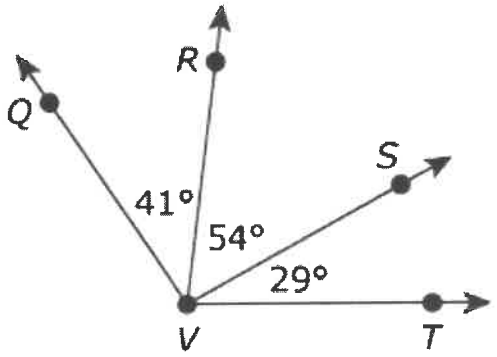
- ○ A. $2\frac{1}{2}$ hours
- ○ B. 2 hours
- ○ C. $\frac{3}{4}$ hour
- ○ D. $\frac{1}{4}$ hour

---

10. Which of these is the measure of an angle that turns through $\frac{1}{3}$ of a circle?

- ○ A. $45°$
- ○ B. $90°$
- ○ C. $120°$
- ○ D. $180°$

11. Some angle measures are shown in this diagram.



- Angle QVR has a measure of $41°$.
- Angle RVS has a measure of $54°$.
- Angle SVT has a measure of $29°$.

Which of the following is the measure, in degrees, of angle QVT?

○ A. $124°$

○ B. $114°$

○ C. $95°$

○ D. $83°$

12. A metal bar has a mass of 5 kilograms.

Which of these is the mass, in **grams**, of the bar?

- ○ A. 50 grams
- ○ B. 500 grams
- ○ C. 5,000 grams
- ○ D. 50,000 grams

---

13. A rectangle has a width of 5 inches and a length of 4 inches.

Which of these equations shows the perimeter, in inches, of the rectangle?

- ○ A. $5 + 4 = 9$
- ○ B. $5 \times 4 = 20$
- ○ C. $2 + 5 \times 2 + 4 = 16$
- ○ D. $2 \times 5 + 2 \times 4 = 18$

14. A group of friends are going to eat lunch in the cafeteria.

- At the cafeteria, a boxed lunch costs $7.
- Each friend in the group will buy a boxed lunch.

Which of these could be the **total** cost to buy boxed lunches for all the friends in the group?

○ A. $62

○ B. $84

○ C. $93

○ D. $97

---

15. The value of the 4 in 62.43 is how many times the value of the 4 in 75.34?

○ A. $\frac{1}{10}$

○ B. $\frac{1}{100}$

○ C. 10

○ D. 100

16. A teacher wrote this expression to solve a math problem.

$$4 \div \frac{1}{12}$$

Which of the following could be the problem the teacher is solving?

- A. An athlete will run 4 miles and then walk $\frac{1}{12}$ mile more. What is the total number of miles the athlete will run and walk?
- B. A group of friends will share 4 whole pies. Each friend will receive $\frac{1}{12}$ of a whole pie. What is the total number of friends that will receive a piece of pie?
- C. A person will work a total of 4 hours this weekend. The person will work $\frac{1}{12}$ hour on Saturday. What is the total number of hours the person will work on Sunday?
- D. A cook will use eggs in 4 recipes this week. The cook will use $\frac{1}{12}$ of a carton of eggs in each recipe. What is the total number of cartons of eggs the cook will use this week?

---

17. A number written in expanded form is shown.

$$\left(2 \times 100\right) + \left(5 \times 1\right) + \left(1 \times \frac{1}{10}\right) + \left(7 \times \frac{1}{100}\right)$$

Which of the following numbers in **word** form is equivalent to the number in expanded form?

- A. two hundred five and seven hundredths
- B. two hundred fifty and seven hundredths
- C. two hundred five and seventeen hundredths
- D. two hundred fifty and seventeen hundredths

18. An expression is shown.

$$(1 + 5) + 4 \times (8 - 2) \div 2$$

What is the value of the expression?

- ○ A. 18
- ○ B. 21
- ○ C. 30
- ○ D. 39

---

19. Find the quotient.

$$1.33 \div 7$$

- ○ A. 19
- ○ B. 1.9
- ○ C. 0.19
- ○ D. 0.019

20. One cup of trail mix contains $\frac{1}{3}$ pound of dried fruit. Riley has $7\frac{1}{2}$ cups of the trail mix.

What is the total amount, in pounds, of dried fruit in Riley's trail mix?

- ○ A. $3\frac{1}{6}$
- ○ B. $2\frac{1}{2}$
- ○ C. $2\frac{1}{3}$
- ○ D. $1\frac{1}{6}$

END OF ROUND 1 - TEST 2

2024 Mathletes Challenge - Round 1 - Test - 1 - Answers

1. C	11. B
2. B	12. B
3. A	13. C
4. D	14. C
5. D	15. B
6. A	16. D
7. B	17. A
8. A	18. B
9. B	19. D
10. D	20. B

2024 Mathletes Challenge - Round 1 - Test - 2 - Answers

1. D	11. A
2. C	12. C
3. A	13. D
4. A	14. B
5. D	15. C
6. A	16. B
7. C	17. C
8. B	18. A
9. A	19. C
10. C	20. B