

## 5th Grade Math Competition Written Test

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. What is the value of the expression  $86.24 - 79.764$ ?

- A. 6.476                      B. 6.484                      C. 13.524                      D. 71.140

2. David and his friends play flag football together. The table below shows the jersey number each friend wears.

Rita	#2
David	#19
Britney	#53
Keith	#72

Who has a jersey with a composite number?

- A. Rita                      B. David                      C. Brittany                      D. Keith

3. Ms. Callahan had 250 sheets of paper. She used 6 sheets of paper. She then gave each student 3 sheets of paper.

Which expression represents the number of sheets of paper Ms. Callahan had left after she gave paper to  $n$  students?

- A.  $250 - 9n$                       B.  $250 - 3n$   
C.  $250 - 9 - 3n$                       D.  $250 - 6 - 3n$

4. What is the quotient of  $13,632 \div 48$  ?

- A. 262 R36                      B. 272                      C. 284                      D. 325 R32

5. I last rode my motorized mini-bike on June 1. I first rode it 60 days before, on
- A. March 31      B. April 1      C. April 2      D. April 3

6. These clues describe a number:

- The digit in the hundred thousands place is the quotient of 16 and 2.
- There are no thousands.
- The digit in the ten thousands place is 2 less than the digit in the hundred thousands place.
- The digit in the hundreds place is greater than 1, is an odd number, and is less than 5.
- The digit in the tens place is the product of 3 and 3.
- The digit in the ones place is 1 more than the digit in the thousands place.

Which number do the clues describe?

- A. 86,391      B. 820,131      C. 860,391      D. 863,910

7. These five rational numbers are plotted on a horizontal number line.

$$-\frac{2}{3}, \frac{7}{8}, -\frac{4}{5}, \frac{7}{10}, -\frac{4}{3}$$

Which statement about the locations of the rational numbers on the number line is true?

- A.  $-\frac{2}{3}$  is farthest to the left, and  $\frac{7}{8}$  is farthest to the right.  
B.  $-\frac{4}{3}$  is farthest to the left, and  $\frac{7}{8}$  is farthest to the right.  
C.  $-\frac{2}{3}$  is farthest to the left, and  $\frac{7}{10}$  is farthest to the right.  
D.  $-\frac{4}{3}$  is farthest to the left, and  $\frac{7}{10}$  is farthest to the right.

8. Solve.

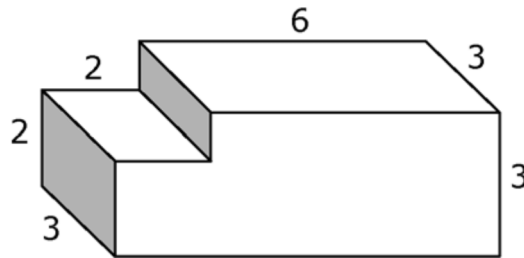
$$\frac{3}{4} + \frac{4}{5} - \frac{7}{10} =$$

- A. 0                      B.  $\frac{7}{10}$                       C.  $\frac{17}{20}$                       D.  $\frac{3}{5}$
9. Which number makes this inequality true?

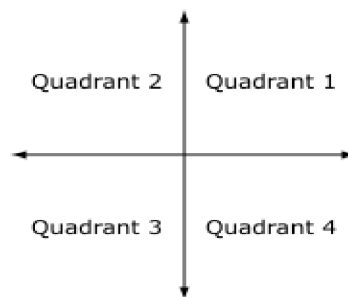
$$4253.647 > \square$$

- A. 4253.664              B. 4253.655              C. 4253.649              D. 4253.638

10. The solid below is made from two non-overlapping right rectangular prisms. What is the volume of the solid?



- A. 28                      B. 55                      C. 66                      D. 72
11. All residents of this state who are registered voters are over 21 years of age. If John is a resident of this state, then it is correct to conclude that:
- A. If John is over 21, he is a registered voter
- B. If John is a registered voter, he is over 21
- C. If John is not a registered voter, he is not over 21
- D. If John is not over 21, he is a registered voter
12. A point is an ordered pair that is plotted on a coordinate plane.



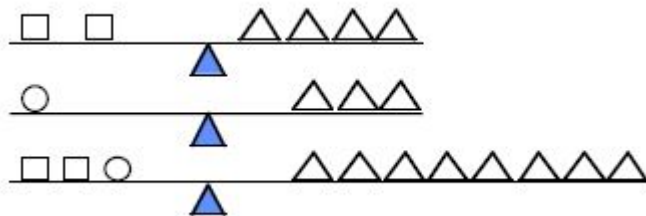
Which point should be plotted in Quadrant 4?

- A.  $(3, -5)$                       B.  $(-4, -2)$                       C.  $(1, 3)$                       D.  $(-1, 2)$

13. Anne spent \$66.00 to rent a violin for 8 months. Which shows the average amount of money ( $t$ ) she spent to rent the violin each month?

A.  $8 = \frac{t}{\$66.00}$     B.  $\$66.00 = \frac{t}{8}$     C.  $t = \frac{8}{\$66.00}$     D.  $t = \frac{\$66.00}{8}$

14. To make the third scale balance, what could you add to the left side of the scale?



- A.  $\triangle$                       B.  $\triangle\triangle$                       C.  $\square$                       D.  $\bigcirc$

15. Here is an expression.

$$\left(\frac{3}{4}\right)^3$$

What is the value of this expression?

- A.  $\frac{9}{64}$                       B.  $\frac{27}{64}$                       C.  $\frac{9}{4}$                       D.  $\frac{27}{4}$

16. Multiply my favorite whole number by 8 then round to the nearest 10. You will get 130. The sum of the digits of my favorite number is

- A. 6                      B. 7                      C. 12                      D. 16

17. The greatest common divisor of 60, 160, and 260 is
- A. 2                      B. 5                      C. 20                      D. 60
18. Felicia is trying to simplify the expression  $9 + (8 \times 9) - (18 \div 3)$ . One step in Felicia's simplification could be any of the following *except*
- A.  $9 + 66$                       B.  $9 + 72 - 6$   
C.  $(9 + 8) \times 9 - 6$                       D.  $9 + (8 \times 9) - 6$
19. Which of the following questions can be answered by finding  $8 \div \frac{1}{5}$ ?
- A. Emily gives  $\frac{1}{5}$  of a pie to 8 students. How many pies does she give students?
- B. Sam has  $\frac{1}{5}$  of a pie to share equally among 8 students. How many pies does Sam share?
- C. A teacher has 8 pies to share equally among 5 students. How many pies does each student get?
- D. Josh has 8 pies and gives  $\frac{1}{5}$  of a pie to each student. How many students get a piece of pie?
20. Benjamin chooses a number. He divides it by 7, adds 7 to the result and multiplies that result by 7. He obtains the result of 777. Which number did he originally choose?
- A. 111                      B. 722                      C. 567                      D. 728

21. Maria wrote the first four whole numbers that are factors of 140.

What is the product of these first four factors?

- A. 12                      B. 40                      C. 70                      D. 280

22. What fraction is halfway between  $\frac{3}{4}$  and  $\frac{11}{12}$ ?



- A.  $\frac{1}{8}$                       B.  $\frac{5}{6}$                       C.  $\frac{3}{2}$                       D.  $\frac{5}{3}$

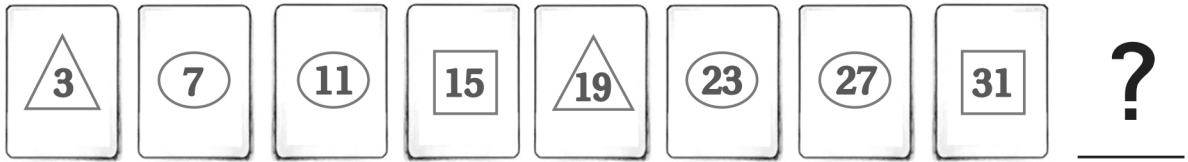
23. Mary is taller than Ann. Ann is shorter than Sarah. What can be concluded from this information?

- A. Mary is the tallest of the three
- B. Ann is the shortest of the three
- C. Sarah is the tallest of the three
- D. Mary and Sarah have the same height

24. James ran 48 yards and Susan ran 150 feet. What is the difference in the number of feet James and Susan ran?

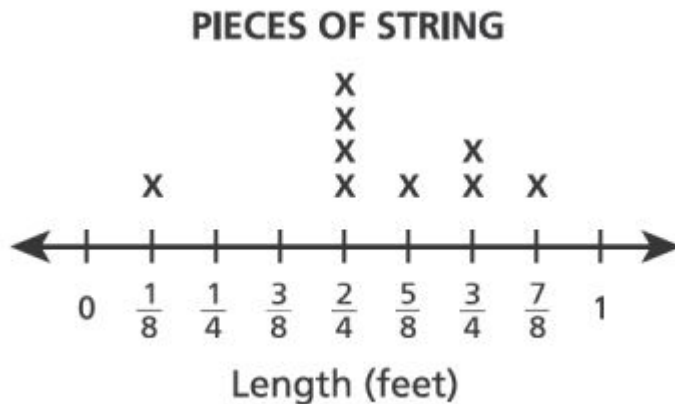
- A. Susan ran 102 feet more than James.
- B. James ran 6 feet more than Susan.
- C. Susan ran 6 feet more than James.
- D. James ran 102 feet more than Susan.

25. Look at the cards arranged in the pattern below. If the pattern continues, what will the next card be?



- A.  B.  C.  D. 

26. The line plot below shows the lengths of all the pieces of string Emma used for an art project. She cut all of these pieces from one original piece of string.



Emma has 1 foot of string left over. How long, in feet, was the original piece of string?

- A.  $1\frac{3}{4}$  feet      B.  $2\frac{7}{8}$  feet      C.  $3\frac{7}{8}$  feet      D.  $6\frac{1}{8}$  feet

27. A community center has three swimming pools. The water level of each pool is measured at 8:00 p.m. each night. Two of the measurements from Saturday night are shown.

- The water level in the first pool is  $3\frac{5}{12}$  feet deep.
- The water level in the second pool is  $4\frac{3}{8}$  feet deep.

The water level in the third pool is  $2\frac{3}{4}$  feet deeper than the second pool. What is the total depth, in feet, of the water level in the third pool?

- A.  $6\frac{3}{8}$                       B.  $6\frac{1}{2}$                       C.  $7\frac{1}{8}$                       D.  $7\frac{3}{4}$

28. Which expression represents

*“divide the sum of 11 and 17 by the product of 7 and 8”*?

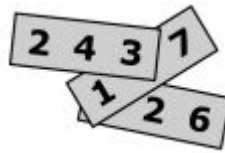
- A.  $(8 \times 7) \div (11 + 7)$                       B.  $(11 + 17) \div (8 \times 7)$   
C.  $11 + 17 \div 8 \times 7$                       D.  $8 \times 7 \div 11 + 17$

29. The median number of points scored by 9 players in a basketball game is 12. The range of the numbers of points scored by the same basketball players in the same game is 7.

Which statement must be true based on the given information?

- A. At least one player scored 12 points.  
B. The greatest number of points scored is less than 19 points.  
C. The mean number of points scored is greater than 12 points.  
D. If the greatest number of points scored is 16, then the least number of points scored is 4.

30. On each of the three separate pieces of paper there is a three digit number. The sum of the three numbers is 826. What is the sum of the 2 hidden digits?



- A. 6                      B. 7                      C. 8                      D. 9
31. Two friends are trying to score a total of 750 points playing a computer game. They use the equation  $425 + t = 750$  to find  $t$ , the number of points still needed to reach the goal.

What is the value of  $t$ ?

- A. 325                      B. 335                      C. 1,100                      D. 1,175
32. The dimensions of the rectangular Hartford Elementary School playground are 172 feet by 196 feet. The fifth-grade physical education class ran 3 laps around the perimeter of the playground.

Which is a correct way to find the total distance the class ran around the perimeter of the playground?

- A. Add  $172 + 196$  and then multiply the sum by 3.
- B. Multiply  $172 \times 196$  and then multiply the product by 3.
- C. Add  $172 + 172 + 196 + 196$  and then add 3 to the sum.
- D. Add  $172 + 172 + 196 + 196$  and then multiply the sum by 3.

33. The area of a rectangular patio is  $5\frac{5}{8}$  square yards, and its length is  $1\frac{1}{2}$  yards. What is the patio's width, in yards?

- A.  $3\frac{3}{4}$  yards      B.  $4\frac{1}{8}$  yards      C.  $7\frac{1}{8}$  yards      D.  $8\frac{7}{16}$  yards

34. A carpenter cuts 6 feet 6 inches from a board that is 8 feet 2 inches long. What is the length of the board after the cut?

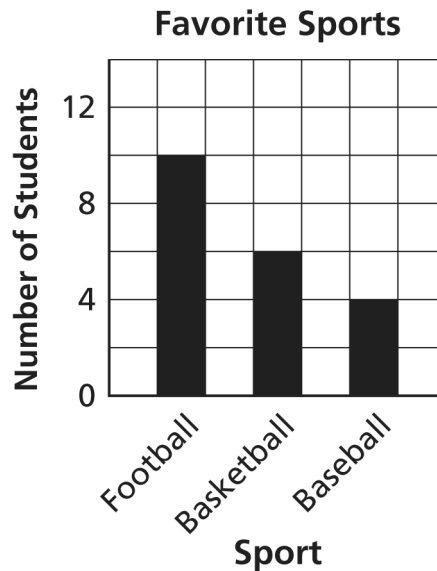
- A. 1 foot 8 inches      B. 2 feet 8 inches  
C. 1 foot 4 inches      D. 3 feet 4 inches

35. Abby saves  $\frac{3}{5}$  of her weekly allowance.

What percent of her weekly allowance does Abby spend?

- A. 0%      B. 35%      C. 40%      D. 60%

36. A group of fifth-grade students was asked which one of three sports they preferred to play after school. The results are shown in the following bar graph.



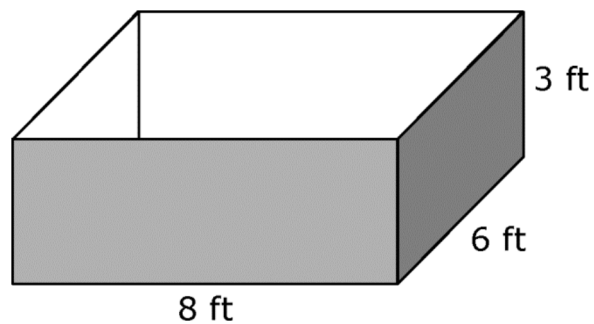
Based upon the information in the bar graph, which statement is true?

- A. Five students chose basketball.
  - B. Sixteen students chose to complete the survey.
  - C. Twice as many students chose baseball as chose football.
  - D. Six more students chose football than chose baseball.
37. Megan will visit her grandmother in Boston. She will spend 1 hour and 35 minutes on an airplane from Charlotte to Washington, D.C.; 1 hour and 15 minutes on an airplane from Washington, D.C., to New York; and 45 minutes on an airplane from New York to Boston. What is the total amount of time she will spend on airplanes?
- A. 7 hr 10 min    B. 5 hr 10 min    C. 3 hr 35 min    D. 1 hr 35 min

38. If 1 bleep = 6 peeps, then 600 peeps = \_\_\_\_\_ bleeps.

- A. 10                      B. 100                      C. 3600                      D. 6000

39. Ana has a planter box that she needs to fill with soil. The cost for 1 cubic foot of soil is \$2. The dimensions of the planter box are shown in the diagram below.



Ana wants to fill the planter box completely with soil. What is the total cost of the soil needed to fill Ana's planter box?

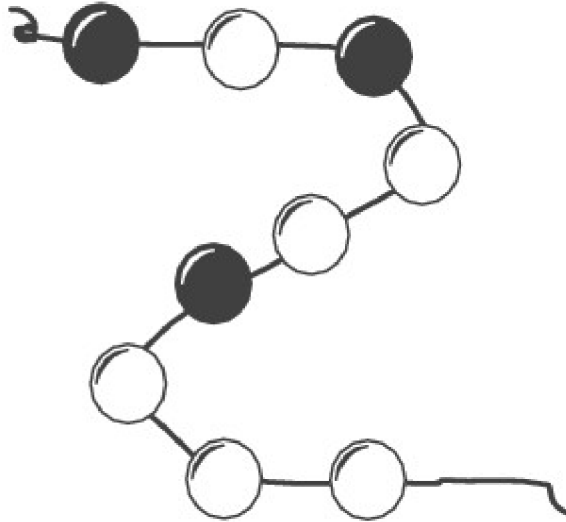
- A. \$72                      B. \$144                      C. \$288                      D. \$360

40. Mrs. Baca's class has 14 fewer students than Mr. Cole's class. Mr. Cole's class has 31 students.

Which equation can be used to find the number of students in Mrs. Baca's class?

- A.  $\blacktriangledown - 14 = 31$     B.  $\blacktriangledown + 31 = 14$     C.  $\blacktriangledown + 14 = 31$     D.  $31 + 14 = \blacktriangledown$

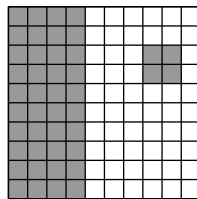
41. Susan bought a bracelet. The beads in the bracelet form a pattern.



What are the next 4 beads on Susan's bracelet?



42. The grid below represents one whole.



Which of the following operations represents the part of the grid that is shaded?

- A.  $0.4 + 0.04$       B.  $0.4 - 0.04$       C.  $0.4 \times 0.04$       D.  $0.4 \div 0.04$

43. Matt went running on four days. The table shows the distance he ran on each day.

Day	Distance (miles)
Sunday	$2\frac{1}{2}$
Monday	$1\frac{5}{6}$
Tuesday	$\frac{5}{8}$
Wednesday	$1\frac{2}{3}$

On which two days did Matt run an estimated total distance that was closest to 3 miles?

- A. Sunday and Tuesday                      B. Monday and Tuesday  
C. Monday and Wednesday                D. Sunday and Wednesday
44. Which number must replace the question mark if the total of the numbers in each row is the same?

1	2	3	4	5	6	7	8	9	10	199
11	12	13	14	15	16	17	18	19	20	?

- A. 54                      B. 99                      C. 109                      D. 154

45. *In April of each year, a 26.2-mile race is held in Boston. The 100th Boston Marathon was run in 1996. Record numbers of runners participated in the race—about 38,700 officially registered runners plus about 2,000 other people who also participated. The following are facts about the Marathon.*

Category	Winner	Time
<b>Men</b>	Moses Tanui	2 h, 9 min, 16 sec
<b>Women</b>	Uta Pippig	2 h, 27 min, 13 sec
<b>Wheelchair (Women)</b>	Jean Driscoll	1 h, 52 min, 54 sec
<b>Wheelchair (Men)</b>	Heinz Frei	1 h, 30 min, 11 sec

How much faster was Jean Driscoll's time in a wheelchair than Moses Tanui's on foot?

- A. 1 h, 43 min, 38 sec                      B. 1 h, 52 min, 22 sec  
 C. 17 min, 38 sec                              D. 16 min, 22 sec
46. Pax wants to make fruit punch for a party using the recipe below.

Fruit Punch
1.25 L orange juice
2.5 L cranberry juice
1 L ginger ale

He will make three times the amount of fruit punch listed in the recipe. What is the total amount of fruit punch, in liters, that Pax will make?

- A. 4.53                      B. 4.75                      C. 12.90                      D. 14.25
47. Without performing the actual calculation, which of the following is true?
- A.  $\frac{8}{11} \times \frac{7}{4} < \frac{4}{7}$       B.  $\frac{6}{10} \times \frac{7}{8} > \frac{6}{10}$       C.  $\frac{3}{8} \times \frac{10}{6} = \frac{3}{8}$       D.  $\frac{1}{9} \times \frac{3}{3} = \frac{1}{9}$

48. The table below lists the capacity, in quarts, of four different fish tanks at a pet store.

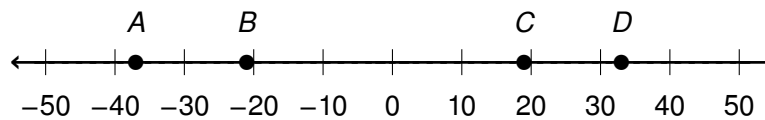
**FISH TANK CAPACITY**

Fish Tank	Capacity (quarts)
Pacific	240
Fresh	15
Tropic	120
Bahama	60

Which fish tank has a capacity of 60 gallons?

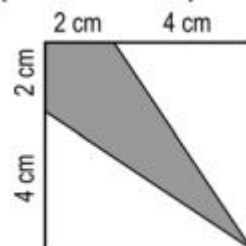
- A. Pacific      B. Fresh      C. Tropic      D. Bahama

49. Which point shows the location of the number with the greatest absolute value?



- A. point A      B. point B      C. point C      D. point D

50. What fraction of the square is gray?



- A.  $\frac{2}{9}$       B.  $\frac{1}{4}$       C.  $\frac{1}{3}$       D.  $\frac{3}{8}$

5th Grade Math Competition Written Test      3/13/2020

1.  
Answer:      A  
Points:      1

2.  
Answer:      D  
Objective:    MS 1d1  
Points:      1

3.  
Answer:      D  
Points:      1

4.  
Answer:      C  
Points:      1

5.  
Answer:      C  
Points:      1

6.  
Answer:      C  
Points:      1

7.  
Answer:      B  
Objective:    CC 6.NS.7a  
Points:      1

8.  
Answer:      C  
Points:      1

9.  
Answer:      D  
Points:      1

10.  
Answer:      C  
Points:      1

11.  
Answer:      B  
Points:      1

12.  
Answer:      A  
Points:      1

13.  
Answer:      D  
Points:      1

14.  
Answer:      A  
Points:      1

15.  
Answer:      B  
Points:      1

16.  
Answer:      B  
Points:      1

17.  
Answer:      C  
Points:      1

18.  
Answer:      C  
Points:      1

19.  
Answer:      D  
Points:      1

20.  
Answer:      D  
Points:      1

21.  
Answer:      B  
Objective:    MS 1c1  
Points:      1

22.  
Answer:      B  
Points:      1

23.  
Answer:      B  
Points:      1

24.  
Answer:      C  
Objective:    LA M.5  
Points:      1

25.  
Answer:      C  
Points:      1

26.  
Answer:      D  
Points:      1

27.  
Answer:      C  
Objective:    CC 5.NF.2  
Points:      1

28.  
Answer: B  
Points: 1

29.  
Answer: A  
Points: 1

30.  
Answer: D  
Points: 1

31.  
Answer: A  
Objective: MS 2a2  
Points: 1

32.  
Answer: D  
Objective: MS 4c2  
Points: 1

33.  
Answer: A  
Points: 1

34.  
Answer: A  
Objective: MS 4b1  
Points: 1

35.  
Answer: C  
Points: 1

36.  
Answer: D  
Objective: MS 5b2  
Points: 1

37.  
Answer: C  
Objective: 2.01  
Points: 1

38.  
Answer: B  
Points: 1

39.  
Answer: C  
Points: 1

40.  
Answer: C  
Points: 1

41.  
Answer: D  
Points: 1

42.  
Answer: A  
Points: 1

43.  
Answer: A  
Points: 1

44.  
Answer: B  
Points: 1

45.  
Answer: D  
Points: 1

46.  
Answer: D  
Objective: CC 5.NBT.7  
Points: 1

47.  
Answer: D  
Objective: CC 5.NF.5  
Points: 1

48.  
Answer: A  
Objective: CC 5.MD.1  
Points: 1

49.  
Answer: A  
Points: 1

50.  
Answer: C  
Points: 1