

MCA

Practice

Test

"A"

Segment 1



1. Find the difference as a mixed number.

$$4\frac{7}{8} - \frac{11}{3} = \square$$

- A. $\frac{29}{24}$
- B. $1\frac{5}{24}$
- C. $\frac{60}{16}$
- D. $3\frac{6}{8}$
2. Tamika keeps track of how many pages she reads in two months. She reads 1,475 pages in September and 968 pages in October. There are 30 days in September and 31 days in October. About how many pages did Tamika read each day?
- A. About 20 pages
- B. About 25 pages
- C. About 38 pages
- D. About 40 pages

- Use the equation below to answer question 3.

$$11 \times 909 = \square$$

3. Which answer shows the correct use of the distributive property?
- A. $11 \times (900 + 9)$
 $(11 \times 900) + (11 \times 9)$
 $(990) + (99)$
 1,089
- B. $11 \times (900 + 9)$
 $(11 \times 900) + (11 \times 9)$
 $(9,900) + (99)$
 9,999
- C. $11 \times (900 + 9)$
 $(11 \times 900) + (11 \times 90)$
 $(990) + (990)$
 1,980
- D. $(10 + 1) \times (900 + 9)$
 $(10 \times 900 + 9) + (1 \times 900 + 9)$
 $(9,009) + (909)$
 9,918

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Minnesota Academic Standards in Mathematics

Item 1: 5.1.3.1 Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. (Level A) Item 2: 5.1.1.4 Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. (Level C) Item 3: 5.2.2.1 Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers. (Level B)

4. Mrs. Nowak's fifth-grade class earns \$512 to donate to seven different Minnesota charities. How much will each charity receive if Mrs. Nowak's class separates their earnings equally?
- A. \$73.13
 - B. \$73.14
 - C. \$73.20
 - D. \$74.00
5. Soo has 3.29 yards of fabric to make a banner for the bake sale. She needs 0.01 more yards to complete the banner. How many total yards will the banner be?
- A. 3.03 yards
 - B. 3.28 yards
 - C. 3.291 yards
 - D. 3.30 yards

Use the diagram below to answer question 6.

1.02	1.03	1.04	1.05	A
				1.16
				B
				C

6. What are the missing numbers in the diagram?
- A. $A = 1.06, B = 1.17, C = 1.18$
 - B. $A = 1.06, B = 1.16, C = 1.26$
 - C. $A = 1.06, B = 1.26, C = 1.36$
 - D. $A = 1, B = 1.26, C = 1.36$

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Minnesota Academic Standards in Mathematics

Item 4: 5.1.1.2 Consider the context in which a problem is situated to select the most useful form of the quotient for the solution and use the context to interpret the quotient appropriately. (Level B) **Item 5: 5.1.2.2** Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number. (Level A) **Item 6: 5.2.1.1** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. (Level B)

7. Which variable makes the equation true?

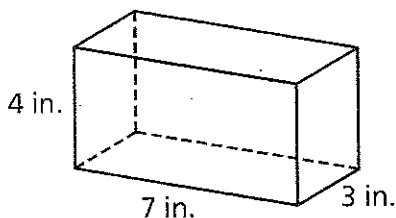
$$73 = 29 + h$$

- A. $h = 44$
- B. $h = 54$
- C. $h = 56$
- D. $h = 102$

9. On Friday night, 288 fans attend the football game. Each section of the bleachers holds 64 seats. How many sections must there be for all of the fans to have a seat?

- A. 3 sections
- B. 4 sections
- C. 5 sections
- D. 6 sections

Use the rectangular prism below to answer question 8.



8. What is the volume of this rectangular prism?

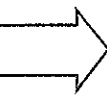
- A. 21 in.^3
- B. 28 in.^3
- C. 80 in.^3
- D. 84 in.^3

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Minnesota Academic Standards in Mathematics

Item 7: 5.2.3.1 Determine whether an equation or inequality involving a variable is true or false for a given value of the variable. (Level A) **Item 8: 5.3.2.4** Develop and use the formulas $V = \ell wh$ and $V = Bh$ to determine the volume of rectangular prisms. Justify why base area B and height h are multiplied to find the volume of a rectangular prism by breaking the prism into layers of unit cubes. (Level B) **Item 9: 5.1.1.1** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. (Level B)

10. Jenny Lind Elementary has 726 chairs to distribute evenly into 25 rooms. How many chairs should be put into each room?
- A. 28 chairs
 - B. 29 chairs
 - C. 30 chairs
 - D. 31 chairs
11. A flower store in Brooklyn Park has 325 flowers. The florist makes bouquets with 16 flowers in each one. How many complete bouquets can be made out of 325 flowers?
- A. 16 bouquets
 - B. 19 bouquets
 - C. 20 bouquets
 - D. 21 bouquets
12. Banita's softball team earns 4, 7, 3, 8, and 3 runs during their last five softball games. What is the mean of their runs scored?
- A. 3 runs
 - B. 4 runs
 - C. 5 runs
 - D. 8 runs

Go on to the next page. 

Minnesota Academic Standards in Mathematics

Item 10: 5.1.1.2 Consider the context in which a problem is situated to select the most useful form of the quotient for the solution and use the context to interpret the quotient appropriately. (Level A) **Item 11: 5.1.1.1** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. (Level A)

Item 12: 5.4.1.1 Know and use the definitions of the mean, median and range of a set of data. Know how to use a spreadsheet to find the mean, median and range of a data set. Understand that the mean is a "leveling out" of data. (Level A)

Name _____ Date _____

Please fill in the grid with your answer to items 13 and 14 on page v of your Answer Document.

13. Find the sum.

$$29.8 + 3.37 = \square$$

14. Mr. Hunter orders 2 cases of markers for the art room. Each case holds 96 boxes of markers. Each box holds 12 markers. How many new markers does the art room have?



Minnesota Academic Standards in Mathematics

Item 13: 5.1.3.1 Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. (Level A) **Item 14:** 5.1.1.4 Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. (Level A)

Segment 2

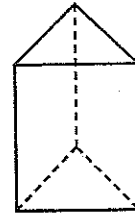


Use the table below to answer question 15.

shots made	14			
shots attempted	25	50	75	100

15. At basketball practice, Elan makes 14 out of 25 shots attempted. If he continues to shoot at the same rate, how many baskets will he make out of 100?
- A. 14 baskets
 - B. 28 baskets
 - C. 42 baskets
 - D. 56 baskets

Use the figure below to answer question 16.

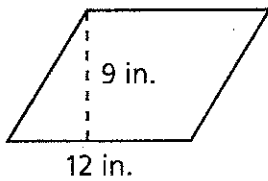


16. How many edges does a triangular prism have?
- A. 5 edges
 - B. 6 edges
 - C. 9 edges
 - D. 12 edges
17. Kiana spends the day at a craft fair. There are 12 artists displaying their work in booths. She visits $\frac{1}{3}$ of the booths in the morning and $\frac{5}{12}$ of the booths in the afternoon. What fraction of the booths does Kiana visit in all?
- A. $\frac{1}{3}$
 - B. $\frac{1}{2}$
 - C. $\frac{3}{4}$
 - D. 12

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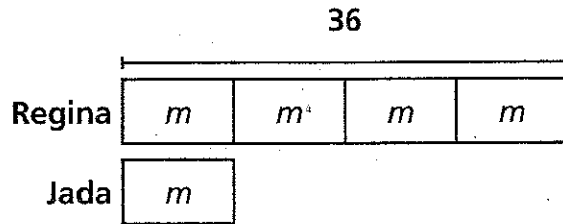
18. Javier is organizing his 321 baseball cards into 5 boxes. He wants to put about the same number of cards in each box. About how many cards will be in each box?
- A. About 50 baseball cards
 - B. About 60 baseball cards
 - C. About 75 baseball cards
 - D. About 80 baseball cards

Use the parallelogram below to answer question 19.



19. What is the area of the parallelogram?
- A. 120 in.²
 - B. 108 in.²
 - C. 54 in.²
 - D. 27 in.²

Use the model below to answer question 20.



20. Regina bikes 36 miles. If Regina bikes 4 times as far as Jada, which equation represents how far Jada bikes (m)?
- A. $5m = 36$
 - B. $m + m + m + m + m = 36$
 - C. $36 - m = 4$
 - D. $36 \div 4 = m$

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Minnesota Academic Standards in Mathematics

Item 18: 5.1.1.3 Estimate solutions to arithmetic problems in order to assess the reasonableness of results. (Level B) **Item 19: 5.3.2.1** Develop and use formulas to determine the area of triangles, parallelograms and figures that can be decomposed into triangles. (Level A) **Item 20: 5.2.3.2** Represent real-world situations using equations and inequalities involving variables. Create real-world situations corresponding to equations and inequalities. (Level B)

21. Kevin rides his bike $1\frac{1}{16}$ miles on Saturday and $2\frac{3}{5}$ miles on Sunday. Estimate how many miles Kevin rides in all.

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

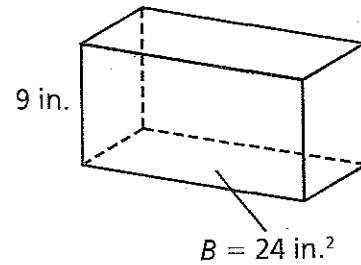
Use the temperatures below to answer question 22.

46°F, 51°F, 48°F, 51°F, 50°F, 45°F

22. Amanda keeps track of the weather in Duluth for six days. She records the temperature at noon each day. What is the median of the temperatures Amanda records?

- A. 51°F
- B. 49°F
- C. 48.5°F
- D. 6°F

Use the figure below to answer question 23.

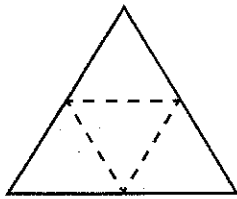


23. Jamil buys a fish tank with the measurements shown. He wants to know how much water the tank will hold. What is the volume of the tank?

- A. 108 in.³
- B. 192 in.³
- C. 216 in.³
- D. 5,184 in.³

Go on to the next page.

Use the net below to answer question 24.



24. Which three-dimensional figure will the net make?

- A. Triangular prism
- B. Triangular pyramid
- C. Cube
- D. Square pyramid

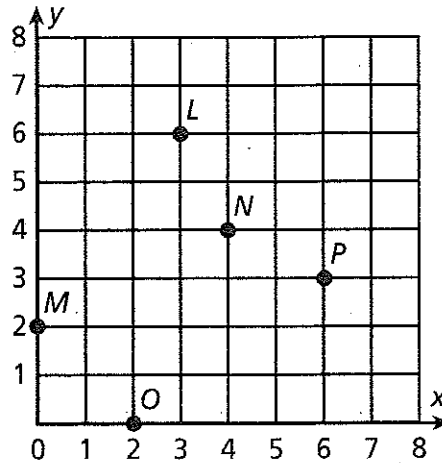
Use the numbers below to answer question 25.

82, 75, 89, 97, 75, 79, 89, 80, 89

25. Parvati records her scores on her math tests. What is the mode of the data?

- A. 22
- B. 82
- C. 84
- D. 89

Use the grid below to answer question 26.



26. Jezebel wants to draw a line from coordinates $(2, 0)$ to $(3, 6)$. What are the two points she is connecting?

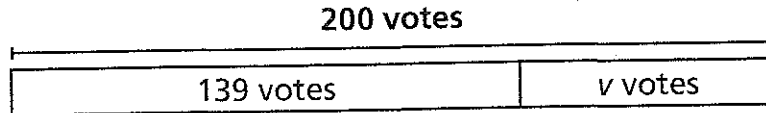
- A. Point N to point O
- B. Point M to point P
- C. Point O to point L
- D. Point P to point N

Go on to the next page.

Name _____ Date _____

Please write your response to item 27 on page vi of your Answer Document.

Use the model below to answer question 27.



27. Jermaine, Chin, and Amos compete in a singing contest at school. Two hundred students vote for their favorite singer. Jermaine and Chin receive a total of 139 votes. What equation can be used to find how many votes (v) Amos receives?

Be sure to show all your work in your Answer Document.



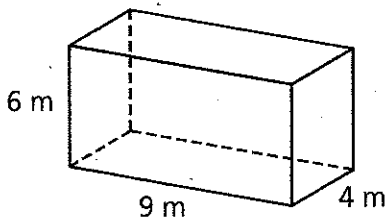
Segment 3



28. Rohit and his family drive eighty-one and seven tenths miles to Minneapolis. What is this distance written in standard form?

- A. 81.007
- B. 81.07
- C. 81.7
- D. 817

Use the figure below to answer question 29.

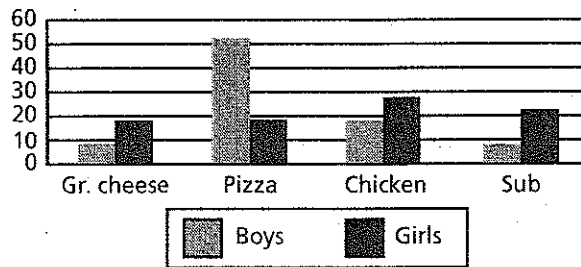


29. What is the volume of the rectangular prism?

- A. 54 m^3
- B. 108 m^3
- C. 192 m^3
- D. 216 m^3

Use the table and graph below to answer question 30.

Lunch Item	Boys	Girls
Grilled Cheese	9	17
Pizza	51	19
Chicken Tenders	18	27
Sub Sandwich	8	23



30. Jasmin takes a survey during lunch. She asks boys and girls their favorite meals from the cafeteria. She records their votes in the table and creates a double-bar graph to display the results of her survey. Does Jasmin display her results correctly?

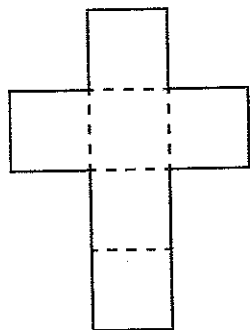
- A. No, Jasmin should have made two separate bar graphs.
- B. No, Jasmin should have displayed her data in a circle graph.
- C. No, Jasmin made an error displaying her data for chicken tenders in the double-bar graph.
- D. Yes, Jasmin displayed her results correctly in the double-bar graph.

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Minnesota Academic Standards in Mathematics

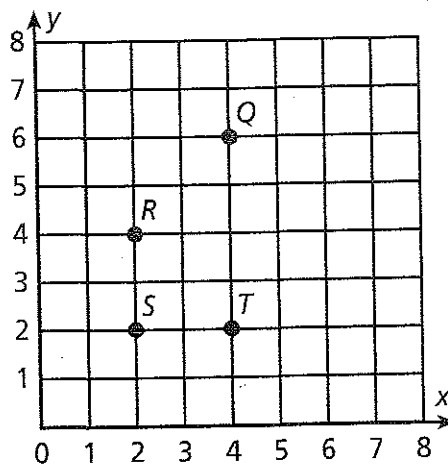
Item 28: 5.1.2.1 Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. (Level A) Item 29: 5.3.2.2 Use various tools and strategies to measure the volume and surface area of objects that are shaped like rectangular prisms. (Level A) Item 30: 5.4.1.2 Create and analyze double-bar graphs and line graphs by applying understanding of whole numbers, fractions and decimals. Know how to create spreadsheet tables and graphs to display data. (Level C)

Use the net below to answer question 31.



31. How many edges will be on the three-dimensional figure this net makes?
- A. 12 edges
 - B. 10 edges
 - C. 8 edges
 - D. 6 edges
32. Seung practices for his relay race. At Monday's practice, his time is 15.67 seconds. At Tuesday's practice, his time is 16.158 seconds. Estimate the difference between the two times.
- A. About 0.3 seconds
 - B. About 0.4 seconds
 - C. About 0.5 seconds
 - D. About 0.6 seconds

Use the grid below to answer question 33.



33. Which ordered pair is located at (4, 2)?
- A. Point Q
 - B. Point R
 - C. Point S
 - D. Point T

Go on to the next page.

34. What value of b makes the equation true?

$$\frac{b}{7} = 21$$

- A. $b = 3$
- B. $b = 7$
- C. $b = 147$
- D. $b = 154$

35. Jasmine cuts four pieces of string for her science project. She cuts the string in measurements of $6\frac{3}{4}$ inches, $5\frac{7}{8}$ inches, $6\frac{7}{10}$ inches, and $6\frac{1}{2}$ inches. What are Jasmine's string measurements in order from least to greatest?

- A. $5\frac{7}{8}$ inches, $6\frac{1}{2}$ inches, $6\frac{3}{4}$ inches, $6\frac{7}{10}$ inches
- B. $5\frac{7}{8}$ inches, $6\frac{1}{2}$ inches, $6\frac{7}{10}$ inches, $6\frac{3}{4}$ inches
- C. $6\frac{3}{4}$ inches, $6\frac{7}{10}$ inches, $6\frac{1}{2}$ inches, $5\frac{7}{8}$ inches
- D. $6\frac{7}{10}$ inches, $6\frac{3}{4}$ inches, $6\frac{1}{2}$ inches, $5\frac{7}{8}$ inches

Use the table below to answer question 36.

Day	Tickets Sold
Sunday	516
Monday	308
Tuesday	391
Wednesday	455
Thursday	391
Friday	579
Saturday	587

36. The Children's Theatre Company records the number of tickets they sell in a week. What is the range in the number of ticket sales?

- A. 279
- B. 391
- C. 455
- D. 461

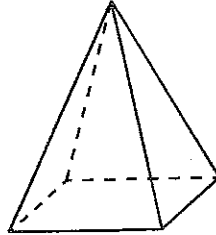
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Minnesota Academic Standards in Mathematics
 Item 34: 5.2.3.3 Evaluate expressions and solve equations involving variables when values for the variables are given. (Level A)
 Item 35: 5.1.2.3 Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. (Level B)
 Item 36: 5.4.1.1 Know and use the definitions of the mean, median and range of a set of data. Know how to use a spreadsheet to find the mean, median and range of a data set. Understand that the mean is a "leveling out" of data. (Level A)

Name _____ Date _____

Please write your response to item 37 on page vii of your Answer Document.

Use the figure below to answer question 37.



37. Clara drew this figure on her notebook.

Part A How many faces does the figure contain?

Part B What is the name of the figure?

Be sure to show all your work in your Answer Document.

Go on to the next page.

Name _____ Date _____

Please write your response to item 38 on page viii of your Answer Document.

Use the table below to answer question 38.

Snow on the Ground (in inches)

Time	Amount of Snow
8 A.M.	3 in.
10 A.M.	5 in.
12 P.M.	6 in.
2 P.M.	5.5 in.

38. On Saturday in Eden Prairie, Greta measures the snow on the ground every two hours. She records her results in the table.

Part A Make a line graph to display Greta's data.

Part B During which two-hour time period does Greta measure the largest increase of snow?

Be sure to show all your work in your Answer Document.



Segment 4



39. Carl has 59 square stickers. He uses them to cover shoeboxes. He can use 18 to cover one shoebox. What mixed number tells the total number of shoeboxes covered by the 59 stickers Carl has?

- A. $3\frac{1}{2}$ shoeboxes
- B. $3\frac{5}{18}$ shoeboxes
- C. $3\frac{3}{18}$ shoeboxes
- D. $3\frac{1}{5}$ shoeboxes

40. Chang solves the equation below.

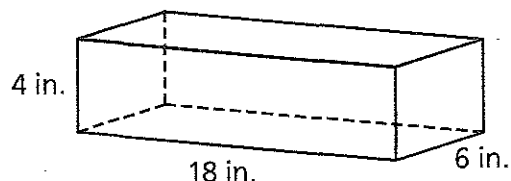
$$117 - x = 28$$

$$x = 145$$

Is the value of the variable correct?

- A. Yes, the value of the variable is 145.
- B. No, the value of the variable should be 28.
- C. No, the value of the variable should be 89.
- D. No, the value of the variable should be 99.

Use the figure below to answer question 41.



41. Adriana is buying paint to paint the box. Find the surface area of the box to help Adriana determine how much paint she will need.

- A. 264 in.^2
- B. 360 in.^2
- C. 408 in.^2
- D. 432 in.^2

Go on to the next page.

42. For lunch Mona buys a turkey sandwich for \$2.55, an apple for \$0.60, and a carton of milk for \$1.09. How much does Mona spend at lunch?

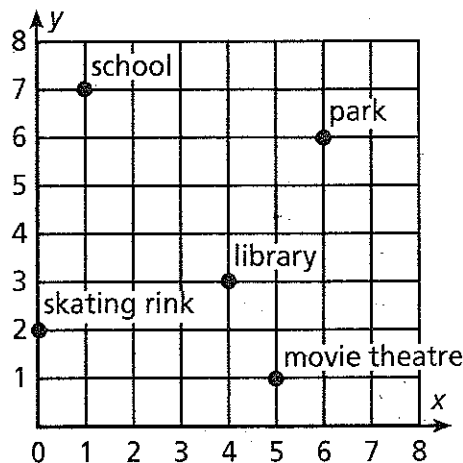
- A. \$3.64
- B. \$4.24
- C. \$4.25
- D. \$4.34

43. Which multiplication property is used in the equation below?

$$(7 \times 5) \times 3 = 7 \times (5 \times 3)$$

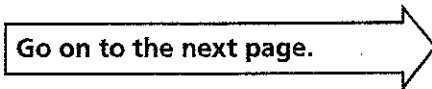
- A. Distributive Property of Multiplication
- B. Identity Property of Multiplication
- C. Commutative Property of Multiplication
- D. Associative Property of Multiplication

Use the grid below to answer question 44.



44. What is the ordered pair of the skating rink on the grid?

- A. (0, 2)
- B. (2, 0)
- C. (1, 2)
- D. (2, 2)



Minnesota Academic Standards in Mathematics

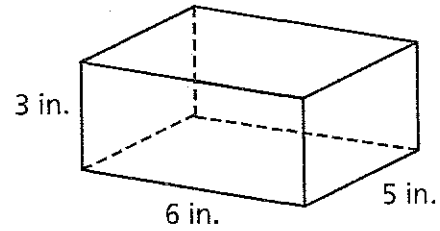
Item 42: 5.1.3.4 Solve real-world and mathematical problems requiring addition and subtraction of decimals, fractions and mixed numbers, including those involving measurement, geometry and data. (Level B) **Item 43: 5.2.2.1** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers. (Level A) **Item 44: 5.2.1.2** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. (Level A)

Use the table below answer question 45.

Baseball Hits					
Days	1	2	3	4	5
Hits	28	26	19	32	30

45. Gavin keeps track of how many hits he makes each day of batting practice. He wants to find the mean of his three highest hits. What is the mean?
- A. 13 hits
 - B. 27 hits
 - C. 28 hits
 - D. 30 hits
46. The population of the state of Minnesota in 2008 was about 5.22 million people. What is 5.22 rounded to the nearest tenth?
- A. 5
 - B. 5.2
 - C. 5.25
 - D. 5.3

Use the rectangular prism below to answer question 47.



47. What is the volume of the rectangular prism?
- A. 33 in.^3
 - B. 52 in.^3
 - C. 63 in.^3
 - D. 90 in.^3

Go on to the next page.

Name _____ Date _____

Please write your response to item 48 on page ix of your Answer Document.

Use the table below to answer question 48.

Ages of Volunteers

Volunteer	Age (in years)
Sara	12
Mr. White	38
Ms. Coffey	29
Joey	15
Rosa	14

48. Five people volunteered at the Sharing Bread Soup Kitchen last weekend. The table shows the ages of the volunteers.

Part A What is the mean age of the volunteers?

Part B What is the range of ages of the volunteers?

Be sure to show all your work in your Answer Document.

Go on to the next page. 

Name _____ Date _____

Please write your response to item 49 on page x of your Answer Document.

49. Anita and Lupe each cut lengths of ribbon to decorate boxes.

Anita cuts two lengths of ribbon. The first ribbon is $7\frac{3}{4}$ feet long and the second is $6\frac{1}{6}$ feet long. Lupe cuts three lengths of ribbon. The first is $3\frac{4}{5}$ feet long, the second is $9\frac{1}{3}$ feet long, and the third is $1\frac{9}{10}$ feet long.

Part A If each student puts her ribbon together, who will make the longer ribbon?

Part B Anita cuts off $8\frac{2}{3}$ feet of her total ribbon. What is the length of her ribbon now?

Part C Lupe attaches a fourth ribbon measuring $3\frac{6}{15}$ feet to her total ribbon. What is the length of her ribbon now?

Be sure to show all your work in your Answer Document.

