4th Grade MEAP Released Items – Mathematics

Based on 3rd Grade GLCE's:

In the third grade, students gain proficiency in addition and subtraction of whole numbers, and continue to develop meaning and computational skill in multiplication. This culminates in knowledge of the 10x10 multiplication table. Students are introduced to decimals through money. Work in measurement is closely related to increased emphasis on ideas from geometry, including developing meaning for area and perimeter.

NOTES

Items are arranged to match the way the items are ordered in the *Item Analysis Repor*t (which coincides with the way the GLCEs are arranged in the *State-Assessed Mathematics GLCEs* document.).

The following GLCE designations are provided:

Core:	Content that is most commonly taught at grade level. **[Core]**
Core, Non-Calculator Item:	Items where calculators are not allowed. **[Core-NC]**
Extended Core:	Content commonly taught at grade level but narrower in scope and/or supportive to the core. **[Ext]**
Future Core:	Content expectations previously taught at a higher grade level; will become core content in 2009-10. **[Fut]**
Not Assessed at the State Level [NASL]:	GLCEs that are part of the State Curriculum, but not assessed on the MEAP. **[NASL]**

Number and Operations

Understand and use number notation and place value:

N.ME.03.01 Read and write numbers to 10,000 in both numerals and words, and relate them to the quantities they represent, e.g., relate numeral or written word to a display of dots or objects. **[Core - NC]**

2 Mrs. Enyart said that she was born in the year one thousand, nine hundred forty-two. In what year was she born?

A 1429

B 1492

C 1924

D 1942

Answer: D

8 The table shows the length of several rivers in Asia.

Rivers in Asia

River Name	Length (in miles)
Chang	3,964
Lena	2,734
Syr	1,370
Yenisey	2,543

Which river's length has a 3 in the tens place?

A Chang

B Lena

C Syr

D Yenisey

Answer: B

13 Which correctly completes the number sentence?

53,277 < _____

A 49,999

B 50,400

C 52,388

D 61,003

Answer: D

N.ME.03.02 Recognize and use expanded notation for numbers using place value to 10,000s place, e.g., 2,517 is 2 thousands, 5 hundreds, 1 ten, and 7 ones; 4 hundreds and 2 ones is 402; identify the place value of a digit in a number, e.g., in 3,241, 2 is in the hundreds place. **[Core - NC]**

7 What is the place value of the 8 in the number 5,280?

A ones

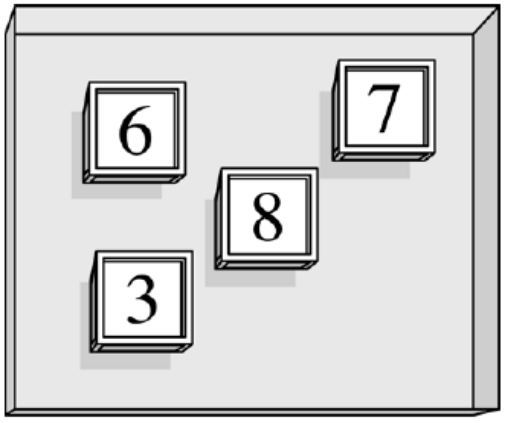
B tens

C hundreds

D thousands

Answer: B

9 What is the *least* number you could make using all the numbers on these blocks?



A three thousand, six hundred seventy-eight

B three thousand, eight hundred seventy-six

C six thousand, three hundred seventy-eight

D six thousand, eight hundred seventy-three

Answer: A

18 Which number is equal to 5,912?

A 5 hundreds, 9 tens, and 12 ones

B 5 thousands, 91 hundreds, and 2 ones

C 5 thousands, 9 hundreds, and 12 tens

D 5 thousands, 9 hundreds, 1 ten, and 2 ones

Answer: D

N.ME.03.03 Compare and order numbers up to 10,000. **[Ext]**

59 Bill, Gary, and Steve each saved all their pennies last year. Bill saved 1,169 pennies. Gary saved 1,099 pennies. Steve saved 1,203 pennies. Which sentence about the number of pennies saved by these boys is true?

A Bill saved the most.

B Gary saved more than Steve.

C Bill saved fewer pennies than Steve.

D Steve saved the least amount of pennies.

Answer: C

Count in steps, and understand even and odd numbers:

N.ME.03.05 Know that even numbers end in 0, 2, 4, 6, or 8; name a whole number quantity that can be shared in two equal groups or grouped into pairs with no remainders; recognize even numbers as multiples of 2. Know that odd numbers end in 1, 3, 5, 7, or 9, and work with patterns involving even and odd numbers. **[Ext]**

60 The addresses of the houses on Lake Street follow a skip counting pattern, as shown below.

What is the address of the house with the question mark?

A 301 Lake Street

B 302 Lake Street

C 303 Lake Street

D 304 Lake Street

Answer: A

N.ME.03.04 Count orally by 6's, 7's, 8's, and 9's starting with 0, making the connection between repeated addition and multiplication. **[NASL]**

Add and subtract whole numbers:

N.FL.03.06 Add and subtract fluently two numbers: up to and including two-digit numbers with regrouping and up to four-digit numbers without regrouping. **[Core - NC]**

3 There are 31 desks in Mrs. Smith's classroom and 29 desks in Mrs. Jones's classroom. How many desks in all are in both rooms?

A 70 desks

B 60 desks

C 58 desks

D 50 desks

Answer: B

6 Martina has a new box of 64 crayons. She drops the box and 17 crayons are broken. How many crayons are **NOT** broken?

A 47 crayons

B 57 crayons

C 53 crayons

D 81 crayons

Answer: A

10 Alonzo takes 88 steps from his house to Sherry's house. He takes 27 more steps to walk from Sherry's house to the store. How many steps does it take Alonzo to walk from his house to Sherry's house to the store?

A 61

B 105

C 113

D 115

Answer: D

N.FL.03.07 Estimate the sum and difference of two numbers with three digits (sums up to 1000), and judge reasonableness of estimates. **[Core - NC]**

11 Ridgewood Elementary School had an election for student body president. Greg received 221 votes. Ellen received 109 votes. Which of the following is *closest* to the difference in the number of votes received?

A 100

B 200

C 300

D 400

Answer: A

12 John had 307 T-shirts for sale. He sold 194 T-shirts. Which of the following is *closest* to the number of shirts that John has left?

A 100

B 200

C 300

D 500

Answer: A

14 The lunchroom serves only hamburgers and pizza on Mondays. Last Monday, 314 students bought a lunch. There were 97 students who bought hamburgers. Which of the following is *closest* to the number of students who bought pizza?

A 100 students

B 200 students

C 300 students

D 400 students

Answer: B

N.FL.03.08 Use mental strategies to fluently add and subtract two-digit numbers **[NASL]**

Multiply and divide whole numbers:

N.MR.03.09 Use multiplication and division fact families to understand the inverse relationship of these two operations, e.g., because 3 x 8 = 24, we know that 24 ÷ 8 = 3 or 24 ÷ 3 = 8; express a multiplication statement as an equivalent division statement. **[Core- NC]**

1 Complete the following fact family.

$36 \div 3 = 12$
$36 \div 12 = 3$
$3 \times 12 = 36$
$12 \times 3 = \square$

A 15

B 24

C 33

D 36

Answer: D

4 Complete the following fact family.

$24 \div 6 = 4$
$24 \div 4 = 6$
$6 \times 4 = 24$
$\square \times 6 = 24$

A 3

B 4

C 5

D 6

Answer: B

5 Complete the following fact family.

$4 \times 7 = 28$
$7 \times 4 = 28$
$28 \div 4 = 7$
$\square \div 7 = 4$

A 35

B 32

C 28

D 24

Answer: C

N.MR.03.10 Recognize situations that can be solved using multiplication and division including finding "How many groups?" and "How many in a group?" and write mathematical statements for those situations. **[Core]**

33 Rachel checked out 3 videotapes from the library. Each tape is 2 hours long. Which number sentence shows the number of hours it will take Rachel to watch all 3 tapes?

A $2 \times 3 = 6$

B $3 + 2 = 5$

C $5 - 3 = 2$

D $3 + 2 + 3 = 8$

Answer: A

44 There are 6 tables in the classroom. There are 4 students sitting around each table. Which number sentence shows how to find the total number of students sitting around the tables?

A $6 - 4 = 2$

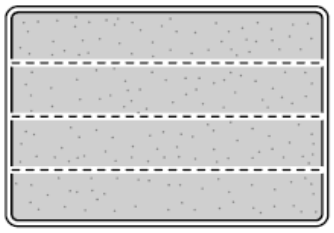
B $6 + 4 = 10$

C $6 \times 4 = 24$

D $6 \div 4 = 1$ R 2

Answer: C

53 Jeremy baked some cornbread in a rectangular pan. He cut the cornbread into 24 pieces by making 4 rows in one direction. Which number sentence shows how many rows he made in the other direction?



A $24 - 4 = 20$

B $24 \div 4 = 6$

C $24 + 4 = 28$

D $24 \times 4 = 96$

Answer: B

N.FL.03.11 Find products fluently up to 10 x 10; find related quotients using multiplication and division relationships. **[Core - NC]**

15 There are 8 socks in Viv's drawer. How many pairs are there?

A 2

B 3

C 4

D 16

Answer: C

16 Which of the following is true?

A $6 \times 3 = 4 \times 4$

B $20 - 5 = 19 - 3$

C $9 + 8 = 10 + 7$

D $2 \times 3 = 2 + 3$

Answer: C

17 Which of the following is a true statement?

A $8 \times 2 = 4 \times 4$

B $1 \times 1 = 1 + 1$

C $10 \times 3 = 10 + 10$

D $6 \times 6 = 5 \times 5 + 1$

Answer: A

N.MR.03.12 Find solutions to open sentences, such as 7 x = 42 or 12 ÷ = 4, using the inverse relationship between multiplication and division. **[Fut]**

72 What number completes the number sentence below?

$$3 \times \square = 12$$

A 3

B 4

C 5

D 6

Answer: B

N.FL.03.13 Mentally calculate simple products and quotients: up to a three-digit number by a one-digit number involving multiples of 10, e.g., 500 x 6, or 400 ÷8. **[NASL]**

N.MR.03.14 Solve simple division problems involving remainders, viewing remainder as the "number left over" (less than the divisor), e.g., 4 children per group; we have 25 children; there are 6 groups with 1 child left over; interpret based on problem context. **[Fut]**

73 Mark has 9 toy cars and 29 stickers to put on the cars. He wants to put the *same* number of stickers on each car. He knows that 29 ÷ 9 = 3 R2. What does R2 represent?

A the number of stickers Mark will put on each car

B the number of cars that will not have stickers

C the number of stickers Mark will have left over

D the number of extra stickers Mark will need

Answer: C

Problem solving with whole numbers:

N.MR.03.15 Given problems that use any one of the four operations with appropriate numbers, represent with objects, words, (including "product" and "quotient"), and mathematical statements; solve. **[Core]**
(No questions associated with this core GLCE.)

Understand simple fractions, relation to the whole, and addition and subtraction of fractions:

N.ME.03.16 Understand that fractions may represent a portion of a whole unit that has been partitioned into parts of equal area or length; use the terms “numerator” and “denominator.” **[Core]**

19 A soft drink costs $0.50. How many quarters would you need to buy it?

A 1

B 2

C 3

D 4

Answer: B

39 John and his 3 friends share $1.00 equally. How much does each boy get?

A $0.10

B $0.25

C $0.50

D $0.75

Answer: B

50 Pinar made a bracelet for her best friend.

What fraction shows how many of the shapes on the bracelet are hearts?

A $\frac{3}{6}$

B $\frac{6}{9}$

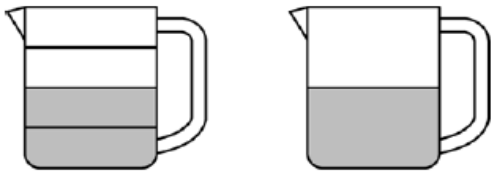
C $\frac{6}{15}$

D $\frac{15}{6}$

Answer: C

N.ME.03.17 Recognize, name and use equivalent fractions with denominators 2, 4, and 8, using strips as area models. **[Ext]**

61 The pictures show equal fractions. Which equation is shown by these pictures?



A $\frac{2}{2} = \frac{1}{1}$

B $\frac{2}{3} = \frac{1}{2}$

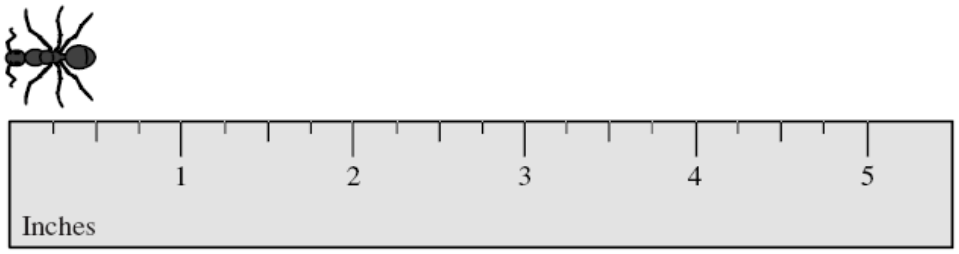
C $\frac{1}{4} = \frac{1}{2}$

D $\frac{2}{4} = \frac{1}{2}$

Answer: D

N.ME.03.18 Place fractions with denominators of 2, 4, and 8 on the number line; relate the number line to a ruler; compare and order up to three fractions with denominators 2, 4, and 8. **[Fut]**

74 Lupe is measuring an ant for science class. How long is the ant?



A $\frac{1}{4}$ inch

B $\frac{3}{8}$ inches

C $\frac{1}{2}$ inch

D $\frac{5}{8}$ inches

Answer: C

N.ME.03.19 Understand that any fraction can be written as a sum of unit fractions, e.g. $\frac{3}{4}=\frac{1}{4}+\frac{1}{4}+\frac{1}{4}$. **[Ext]**

62 Derek is pulling weeds from his garden. The garden has 6 equal rows of plants. Derek has pulled the weeds from 3 of the rows. Which equation shows how many rows Derek has finished?

A $\frac{1}{6}+\frac{1}{6}+\frac{1}{6}=\frac{3}{6}$

B $\frac{1}{3}+\frac{1}{3}+\frac{1}{3}=\frac{3}{3}$

C $\frac{1}{9}+\frac{1}{9}+\frac{1}{9}=\frac{3}{9}$

D $\frac{1}{6}+\frac{1}{6}+\frac{1}{6}=\frac{3}{18}$

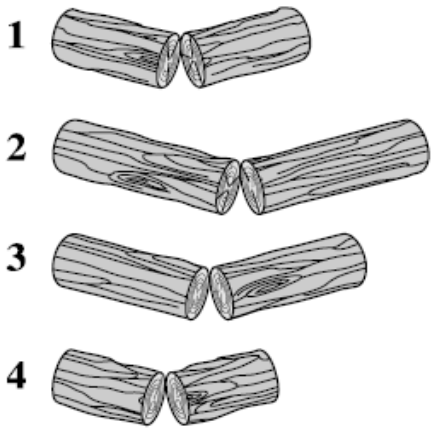
Answer: A

N.MR.03.20 Recognize that addition and subtraction of fractions with equal denominators can be modeled by joining or taking away segments on the number line. **[Ext]**
(No questions associated with this extended core GLCE.)

Understand simple decimal fractions in relation to money:

N.ME.03.21 Understand the meaning of \$0.50 and \$0.25 related to money, e.g., \$1.00 shared by two people means \$1.00 ÷ 2 = $\frac{1}{2}$ dollar = \$0.50. **[Core]**

20 Each of the 4 logs below has been cut in half.



Which log has the *longest* half?

A 1

B 2

C 3

D 4

Answer: B

21 John put 4 quarters in his bank. How much money did he put in his bank?

A \$1.00

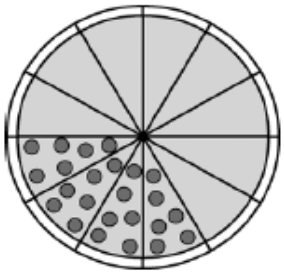
B \$1.25

C \$2.00

D \$4.00

Answer: A

40 What fractional part of the pizza has pepperoni?



A $\frac{4}{4}$

B $\frac{8}{12}$

C $\frac{4}{8}$

D $\frac{4}{12}$

Answer: D

Measurement

Measure and use units for length, weight, temperature and time:

M.UN.03.01 Know and use common units of measurements in length, weight and time.
[Core]

27 The calendar in Val's classroom shows that it is February. About how long is it until summer?

A 4 years

B 4 minutes

C 4 weeks

D 4 months

Answer: D

43 Erin is making banana pudding. She buys bananas at the store. What is the *most likely* amount of bananas she would buy?

A 2 pounds

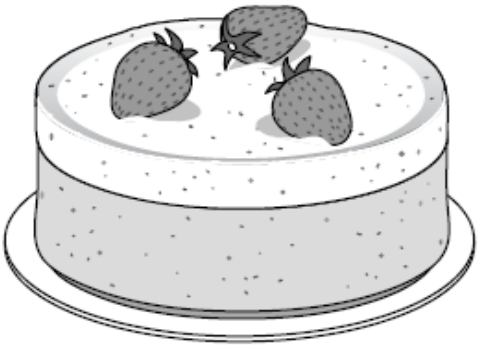
B 2 grams

C 2 ounces

D 2 inches

Answer: A

47 Which of the following is the *best* estimate of the weight of these strawberries?



A 6 ounces

B 6 pounds

C 16 ounces

D 16 pounds

Answer: A

M.UN.03.02 Measure in mixed units within the same measurement system for length, weight and time: feet and inches, meters and centimeters, kilograms and grams, pounds and ounces, liters and milliliters, hours and minutes, minutes and seconds, years and months. **[Core]**

35 The length of one string is 90 cm. The length of another string is 55 cm. What is the total length of the two strings together?

A 1 meter 25 centimeters

B 1 meter 45 centimeters

C 2 meters 25 centimeters

D 2 meters 45 centimeters

Answer: B

45 Mr. Garza has two boards. One board is 80 cm long and the other is 40 cm long. What is the total length of the two boards?

A 1 meter 20 centimeters

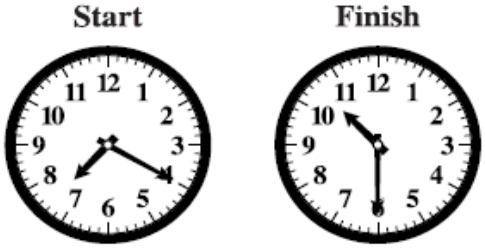
B 1 meter 40 centimeters

C 2 meters

D 2 meters 20 centimeters

Answer: A

49 The two clocks show the start and finish times of a concert. How long did the concert last?



A 4 hr 50 min

B 4 hr 10 min

C 3 hr 10 min

D 2 hr 50 min

Answer: C

M.UN.03.03 Understand relationships between sizes of standard units, e.g., feet and inches, meters and centimeters. **[Core]**

31 Which of these heights is tallest?

A 4 feet 6 inches

B 5 feet 1 inch

C 5 feet 7 inches

D 4 feet 11 inches

Answer: C

51 Which of these babies is *oldest*?

A Mary is 17 months old.

B Arthur is 1 year 2 months old.

C Jeanne is 9 months old.

D Patty is $1\frac{1}{2}$ years old.

Answer: D

54 Which age is the *youngest*?

A 10 years 1 month

B 120 months

C 9 years 8 months

D 9 years 4 months

Answer: D

M.UN.03.04 Know benchmark temperatures such as freezing (32°F, 0°C); boiling (212°F, 100°C); and compare temperatures to these, e.g., cooler, warmer. **[Core]**

25 Which temperature is *below* freezing?

A 35°F

B 38°F

C 49°F

D 29°F

Answer: D

55 At what temperature does water begin to boil?

A 0°C

B 32°C

C 100°C

D 200°C

Answer: C

57 What is 20° above freezing in Celsius?

A 50°C

B 40°C

C 30°C

D 20°C

Answer: D

Understand meaning of area and perimeter and apply in problems:

M.UN.03.05 Know the definition of area and perimeter and calculate the perimeter of a square and rectangle given whole number side lengths. **[Core]**

42 Find the perimeter of a square that is 10 inches on each side.

A 20 inches

B 30 inches

C 40 inches

D 100 inches

Answer: C

46 Find the perimeter of a square that is 6 cm on each side.

A 12 cm

B 18 cm

C 24 cm

D 36 cm

Answer: C

48 A square baking pan is 9 inches on each side. What is the perimeter of the pan?

A 18 inches

B 27 inches

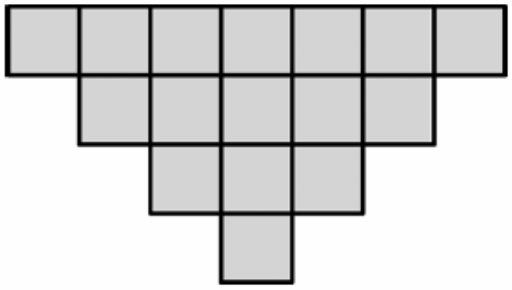
C 36 inches

D 81 inches

Answer: C

M.UN.03.06 Use square units in calculating area by covering the region and counting the number of square units. **[Ext]**

63 What is the area of the game board?



A 1 square unit

B 4 square units

C 9 square units

D 16 square units

Answer: D

M.UN.03.07 Distinguish between units of length and area and choose a unit appropriate in the context. **[Ext]**

64 Carrie and her friends are running in a race. Which unit can be used to measure the length of the race?

A square feet

B square meters

C liters

D meters

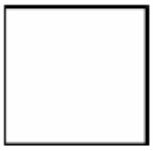
Answer: D

M.UN.03.08 Visualize and describe the relative sizes of one square inch and one square centimeter. **[Ext]**

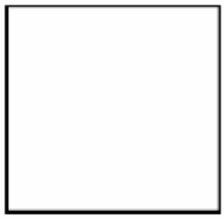
65 Which of these figures is *closest* to 1 square centimeter in area?

A

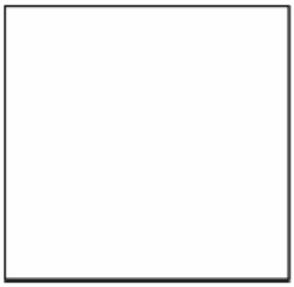
B



C



D



Answer: A

Estimate perimeter and area:

M.TE.03.09 Estimate the perimeter of a square and rectangle in inches and centimeters; estimate the area of a square and rectangle in square inches and square centimeters. **[Fut]**

75 Use your ruler to measure the perimeter of the gum wrapper, in cm. What is the perimeter?

A 28 centimeters

B 34 centimeters

C 40 centimeters

D 70 centimeters

Answer: B

Solve measurement problems:

M.PS.03.10 Add and subtract lengths, weights and times using mixed units, within the same measurement system. **[Fut]**

76 A baker puts three ingredients into a large mixing bowl. The weights of the ingredients are 3 pounds, 4 ounces; 1 pound, 1 ounce; and 5 pounds, 7 ounces. What is the total weight of the ingredients?

A 4 pounds, 5 ounces

B 6 pounds, 8 ounces

C 8 pounds, 11 ounces

D 9 pounds, 12 ounces

Answer: D

M.PS.03.11 Add and subtract money in dollars and cents. **[Core]**

23 Cody needs $5.75 to buy a gift. He only has $3.25. How much more money does Cody need?

A $2.50

B $3.25

C $3.50

D $9.00

Answer: A

29 Lani went to the store with $8.00 and spent $0.60 to buy some gum. How much money did Lani have left?

A $7.40

B $7.60

C $8.40

D $8.60

Answer: A

36 Mark bought some school supplies for $4.15. He handed the store clerk a $5.00 bill. How much change should Mark receive from the clerk?

A $1.95

B $1.85

C $0.95

D $0.85

Answer: D

M.PS.03.12 Solve applied problems involving money, length and time. **[Ext]**

66 India is 3 feet, 5 inches tall. Her mother is 5 feet, 7 inches tall. How much taller is India's mother than India?

A 2 feet, 2 inches

B 2 feet, 12 inches

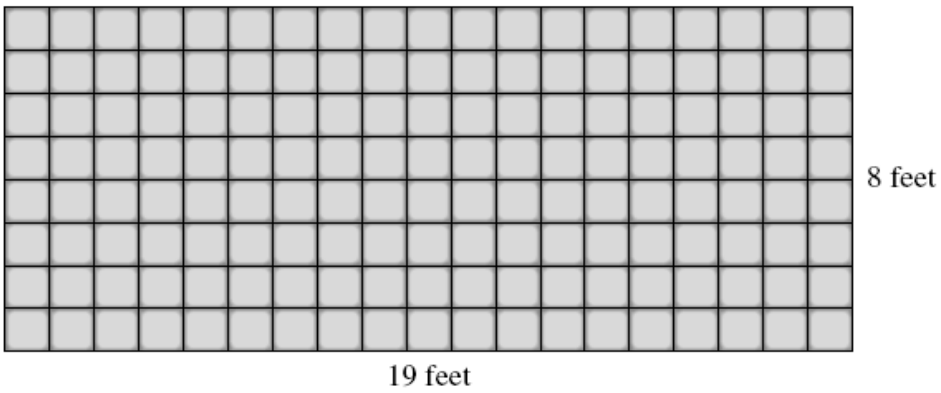
C 8 feet, 12 inches

D 9 feet

Answer: A

M.PS.03.13 Solve contextual problems about perimeters of rectangles and areas of rectangular regions. **[Ext]**

67 What is the perimeter of Mrs. Johnson's kitchen floor?



A 27 feet

B 54 feet

C 89 feet

D 152 feet

Answer: B

Geometry

Recognize the basic elements of geometric objects:

G.GS.03.01 Identify points, line segments, lines and distance. **[Ext]**

68 Justin is drawing a map of the United States. Which of these is *best* for showing a city on his map?

A line

B point

C line segment

D perpendicular lines

Answer: B

G.GS.03.02 Identify perpendicular lines and parallel lines in familiar shapes and in the classroom. **[Fut]**

77 Which letter has perpendicular lines?

A M

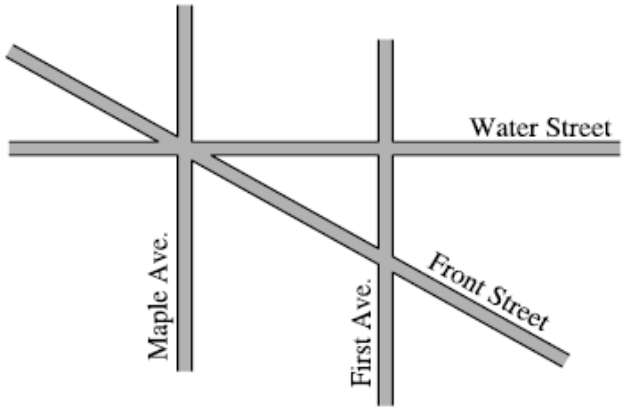
B Y

C H

D Z

Answer: C

78 Which two roads on the following map appear to be parallel?



A Maple Ave. and Water St.

B First Ave. and Front St.

C Water St. and Front St.

D First Ave. and Maple Ave.

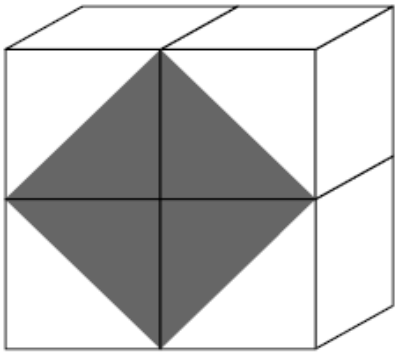
Answer: D

G.GS.03.03 Identify parallel faces of rectangular prisms, in familiar shapes and in the classroom. **[Ext]**
(No questions associated with this extended core GLCE.)

Name, and explore properties of shapes:

G.GS.03.04 Identify, describe, compare and classify two-dimensional shapes, e.g., parallelogram, trapezoid, circle, rectangle, square and rhombus, based on their component parts (angles, sides, vertices, line segment) and the number of sides and vertices. **[Ext]**

69 Look at the four blocks stacked below.



What shape is formed by the shaded parts of the blocks?

A a triangle

B a square

C a pentagon

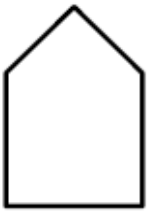
D a hexagon

Answer: B

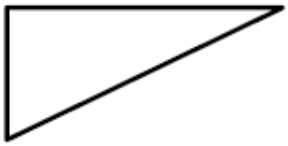
G.SR.03.05 Compose and decompose triangles and rectangles to form other familiar two-dimensional shapes; e.g., form a rectangle using two congruent right triangles, or decompose a parallelogram into a rectangle and two right triangles. **[Core]**

26 Which new figure can be formed by putting the rectangle and the triangle together?

A



B

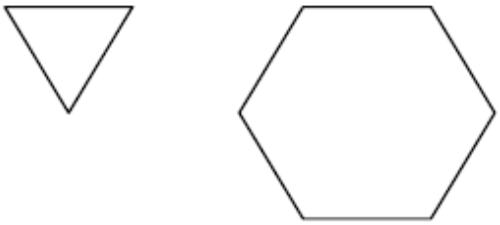


C

D

Answer: C

41 Each side of the triangle and the hexagon below is about 2 centimeters long.



Which is the *best* estimate of the number of triangles that will fit completely inside the hexagon?

A 1

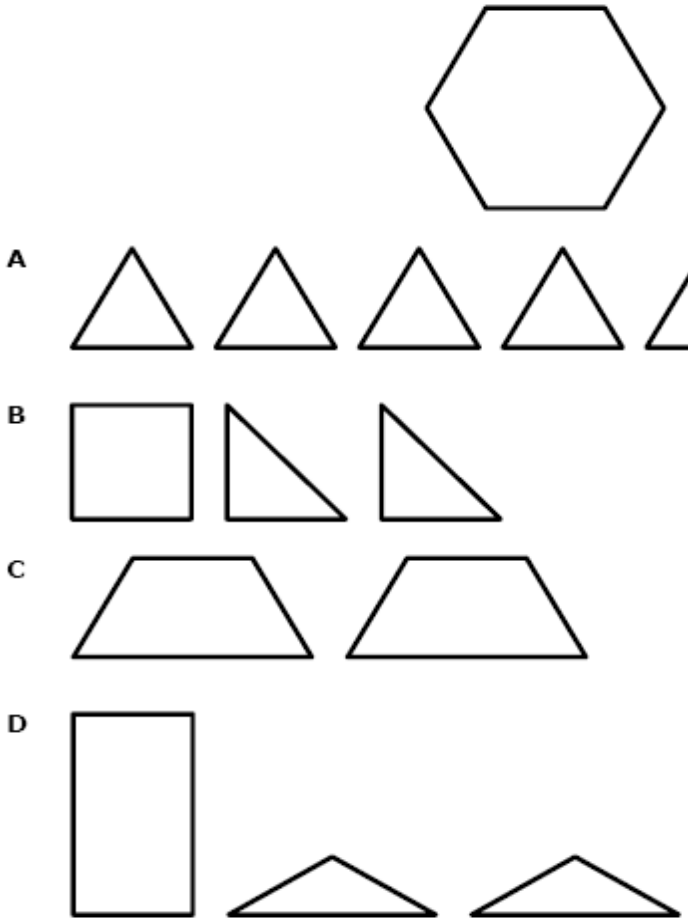
B 3

C 6

D 9

Answer: C

56 Which group of figures **CANNOT** be made by cutting up the hexagon?



Answer: B

Explore and name three-dimensional solids:

G.GS.03.06 Identify, describe, build and classify familiar three-dimensional solids, e.g., cube, rectangular prism, sphere, pyramid, cone, based on their component parts (faces, surfaces, bases, edges, vertices). **[Core]**

34 A can of soup is an example of what kind of figure?

A cone

B sphere

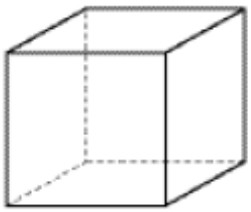
C pyramid

D cylinder

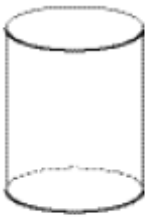
Answer: D

37 Which of these figures does **NOT** have *at least* one base?

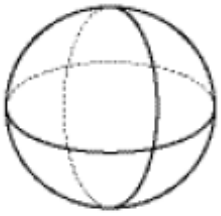
A



B



C



D

Answer: C

52 Which geometric object has *at least* one curved surface and one flat surface?

A pyramid

B sphere

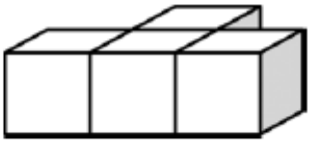
C prism

D cone

Answer: D

G.SR.03.07 Represent front, top, and side views of solids built with cubes. **[Ext]**

70 Look at the figure below.

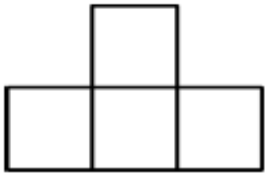


What does the top view of this figure look like?

A

B

C



D

Answer: C

Data and Probability

Use bar graphs:

D.RE.03.01 Read and interpret bar graphs, in both horizontal and vertical forms. **[Ext]**

71 Some scouts made a table to show the number of miles they hiked while on a camping trip.

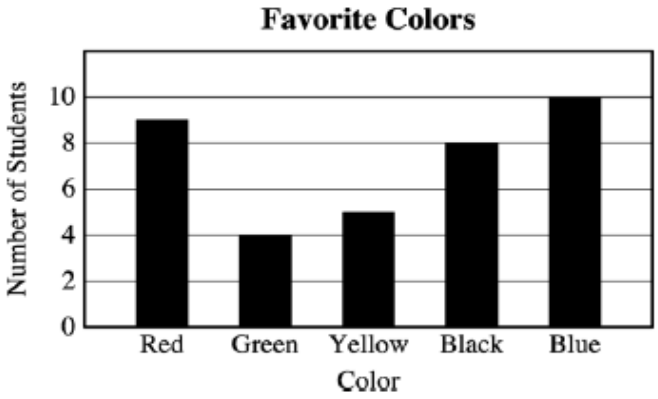
Scout	Number of Miles
Will	10
Shawn	6
Lamar	8

Answer: C

N.ME.03.04 Count orally by 6's, 7's, 8's, and 9's starting with 0, making the connection between repeated addition and multiplication. **[NASL]**

D.RE.03.02 Read scales on the axes and identify the maximum, minimum, and range of values in a bar graph. **[Core]**

22 The students in Mr. Carr's class listed their favorite colors. How many students picked the *most* favored color?



A 7

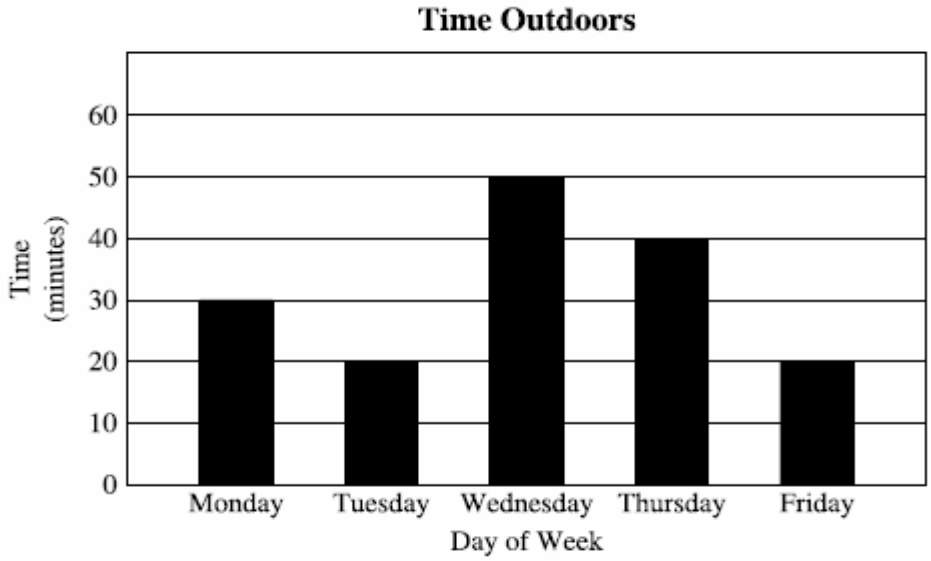
B 8

C 9

D 10

Answer: D

24 Kwame made a graph of the time he spent playing outdoors each day for 5 days.



What is the *most* time he spent outdoors in one day?

A 60 minutes

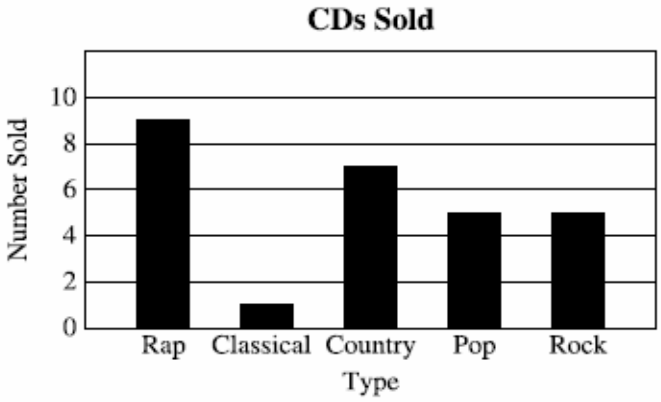
B 50 minutes

C 40 minutes

D 20 minutes

Answer: B

28 This graph shows the CD sales for one day. Look at the CDs that sold the most. How many were sold?



A 5

B 7

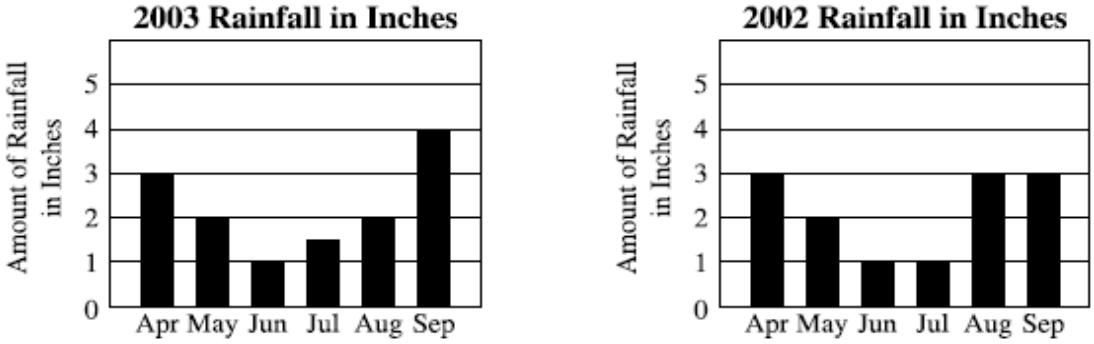
C 8

D 9

Answer: D

D.RE.03.03 Solve problems using information in bar graphs, including comparison of bar graphs. **[Core]**

30 The amounts of rainfall from April through September for two different years are shown in the two graphs below.



Which was the maximum amount of rainfall in one month?

A 1 inch

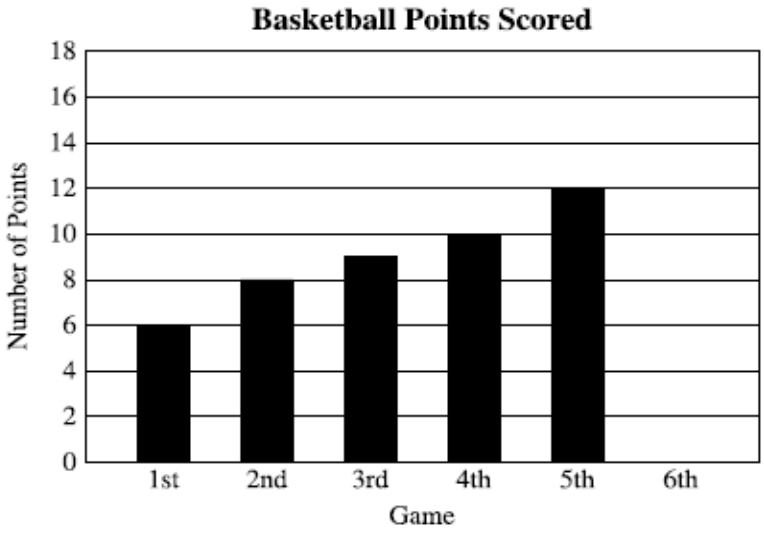
B 2 inches

C 3 inches

D 4 inches

Answer: D

32 This graph shows the number of points a team scored in their first five games.



What would be a reasonable prediction of the score for the team's sixth game if they continue to improve at this rate?

A below 12

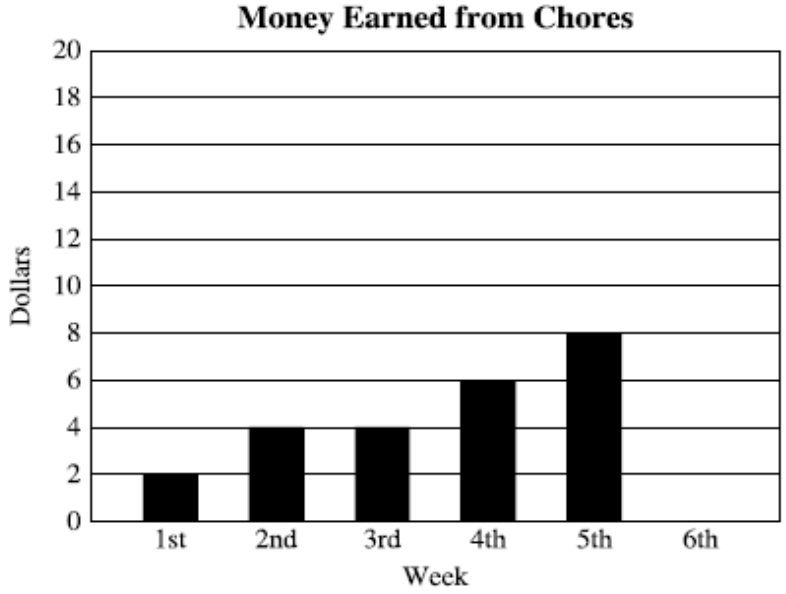
B between 12 and 14

C between 16 and 18

D above 18

Answer: B

38 Darrell graphed the money he has earned for the past five weeks.



If this pattern continues, what would be a reasonable prediction of his earnings for the sixth week?

A over $20

B between $14 and $18

C between $12 and $14

D between $8 and $10

Answer: D