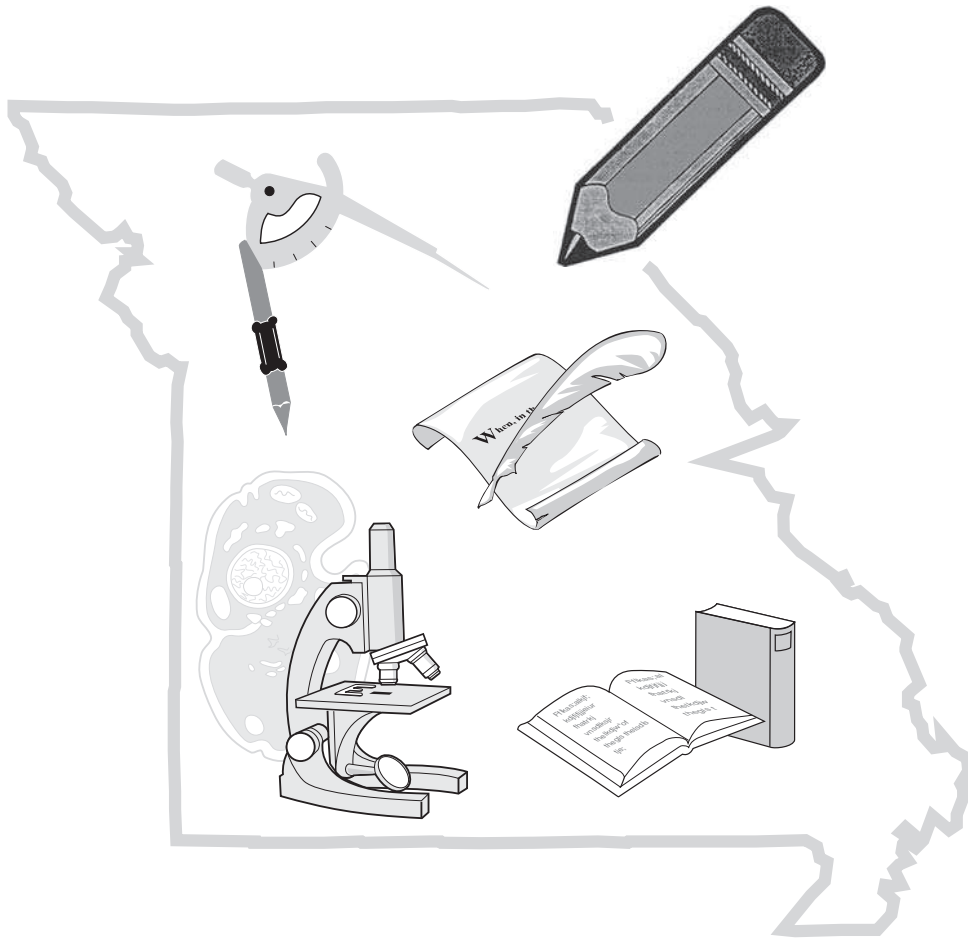Name: _____

District/School: _____

Missouri Assessment Program

Released Practice Form
Grade 4
Mathematics

1. Dustin's cat weighs 8.75 pounds. What is the weight, in pounds, of Dustin's cat written as a number name?

   A.   eight and seventy-five

   B.   eight hundred seventy-five

   C.   eight and seventy-five tenths

   D.   eight and seventy-five hundredths

2. Bailey lives 1,284 miles from the Atlantic Ocean. She rounds this distance to a certain place value. Select the **two** numbers that could be Bailey's correctly rounded distance, in miles.

   A.   1,200

   B.   1,280

   C.   1,290

   D.   1,300

   E.   2,000

3. Anita's dad is 6 feet tall. How many **inches** tall is Anita's dad?

   A.   6 inches

   B.   12 inches

   C.   62 inches

   D.   72 inches

4. A group of 155 students and 14 adults go on a field trip. They take 4 buses on the field trip. The people going on the field trip are divided as evenly as possible among the 4 buses. What is the greatest number of people on any of the 4 buses?

Go on to the next page.

5. Ken collects coins from different countries. He measures the width, in inches, of each coin. He rounds each width to the nearest $\frac{1}{8}$ inch. His measurements are listed below.

$$1, \frac{7}{8}, \frac{5}{8}, \frac{4}{8}, \frac{5}{8}, \frac{7}{8}, \frac{6}{8}, 1, \frac{7}{8}$$

Make a line plot to represent Ken's data.

Coin Measurement (inches)
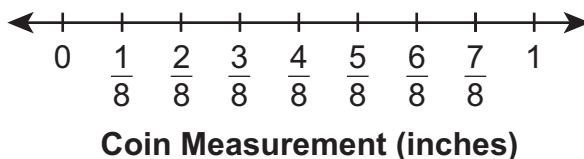
6. Of the members on the school cheer team, $\frac{3}{12}$ wore shorts at practice. One of the members who wore shorts was a boy, and the other two members who wore shorts were girls. Which equation correctly represents the members of the school cheer team who wore shorts at practice?

A. $\frac{3}{12} = \frac{1}{6} + \frac{2}{6}$

B. $\frac{3}{12} = \frac{1}{12} + \frac{2}{12}$

C. $\frac{3}{12} = \frac{2}{4} + \frac{1}{4}$

D. $\frac{3}{12} = \frac{3}{12} + \frac{9}{12}$

7. Alex earned $3,208 in the month. He had to make a monthly rent payment of $1,439. How much of the money earned did Alex have left?

    A. $1,769
    B. $1,779
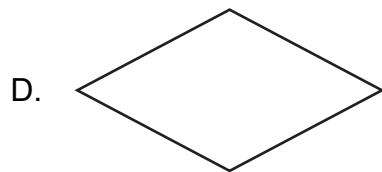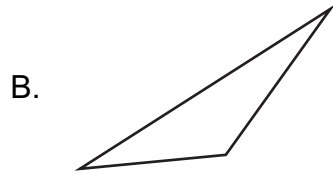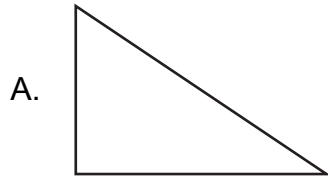   C. $1,879
    D. $2,231

8. The first four terms of a number pattern are shown.

    11, 16, 21, 26

    What rule describes how to make the number pattern?

    A. Starting at 11, add 5 to each term.
    B. Starting at 11, add 16 to each term.
    C. Starting at 26, add 5 to each term.
    D. Starting at 26, add 11 to each term.

Go on to the next page.

9. Sam draws an equilateral triangle. Which shape could be Sam's shape?

A.

B.

C.

D.

10. Barbara received 6 paychecks for $1,906 each. To find how much money she earned, Barbara used the expression 6 × 1,906. How much money, in dollars, did Barbara earn?

Go on to the next page.

11. Marcy exercised for 5 hours last week. She swam for $\frac{3}{4}$ of the time she exercised last week. How many hours did Marcy swim last week?

A. $3\frac{3}{4}$

B. $4\frac{1}{4}$

C. $4\frac{3}{4}$

D. $5\frac{3}{4}$

12. An angle is shown.
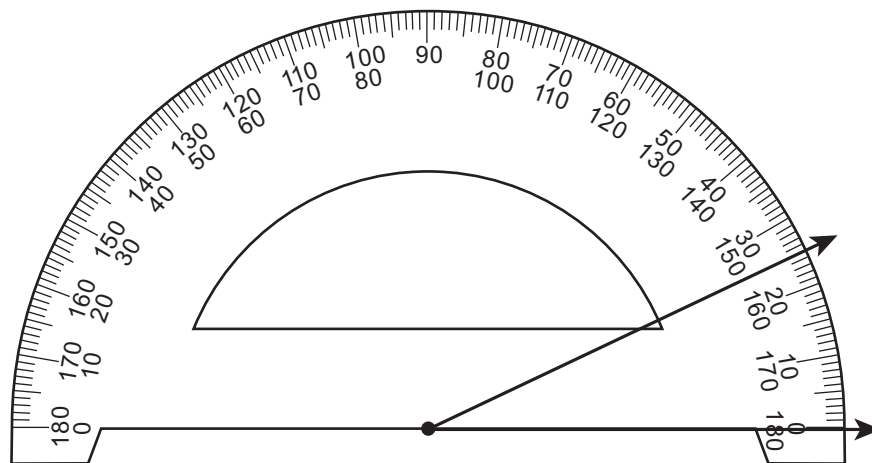
What is the measure of the angle?

A. 25°

B. 35°

C. 155°

D. 165°

Go on to the next page.

13. Kelsey writes down her high score in a video game. One of the digits in her high score represents a value that is 10 times greater than the value of another digit in her high score. Which score could be Kelsey's high score?

    A. 35,610

    B. 47,753

    C. 56,895

    D. 60,606

14. Tom noticed $\dfrac{4}{100}$ of the cars in a parking lot are red. What is the fraction of the red cars written as a decimal?

15. Liam has 4 books. Mason has 3 times as many books as Liam. Which equation shows how to find the number of books Mason has?

    A. $4 + 3 = \square$

    B. $4 - 3 = \square$

    C. $4 \times 3 = \square$

    D. $4 \div 3 = \square$

16. Jackie says her town has one hundred eighty thousand four hundred seventeen people living in it. What is this number written in expanded form?

    A. 180,000 + 400 + 17

    B. 100 + 80 + 1,000 + 400 + 17

    C. 100,000 + 80,000 + 400 + 10 + 7

    D. 100,000 + 80,000 + 4,000 + 100 + 70 + 0

17. Jeremiah built a rectangular deck that has an area of 198 square feet. The deck has a width of 9 feet. What is the length, in feet, of Jeremiah's deck?

Go on to the next page.

18. Select the **two** prime numbers.

    A. 8

    B. 12

    C. 13

    D. 21

    E. 23

19. Maria measures the areas of two parks in square feet.
    - Murphy Park has an area of 21,483 square feet.
    - Waterfront Park has an area of 20,395 square feet.

    Maria writes 21,483 > 20,395 to correctly compare the areas of the two parks.

    In each number, circle the digit that can be used to compare the two areas.

    <p style="text-align:center">2 1 , 4 8 3   2 0 , 3 9 5</p>

20. Allan ran $\dfrac{5}{8}$ of a mile. Garrett ran $\dfrac{5}{6}$ of a mile. Allan says he ran farther than Garrett because 8 is greater than 6. Which statement best explains why Allan is **not** correct?

    A. Garrett ran farther because $\dfrac{5}{6}$ is the same as $\dfrac{7}{8}$, and $\dfrac{7}{8}$ is greater than $\dfrac{5}{8}$.

    B. Garrett ran farther because 5 + 6 = 11 and 5 + 8 = 13, and 11 is less than 13.

    C. Allan and Garrett ran the same distance because they both ran 5 parts of a mile.

    D. Garrett ran farther because each of the 5 parts of a mile he ran is greater than each of the 5 parts of a mile Allan ran.
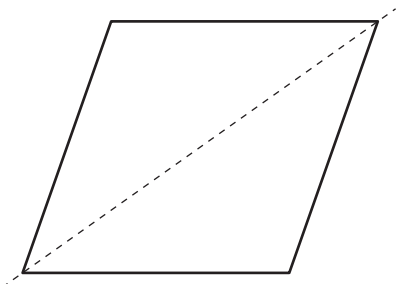
Go on to the next page.
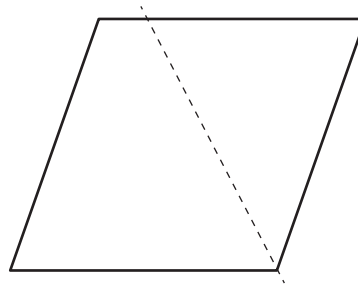
21. A rhombus is shown.
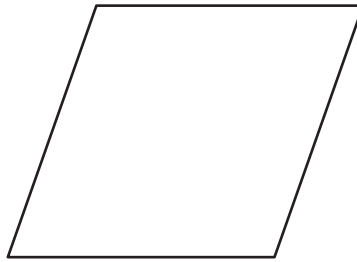
Which diagram shows the correct line of symmetry for the rhombus?
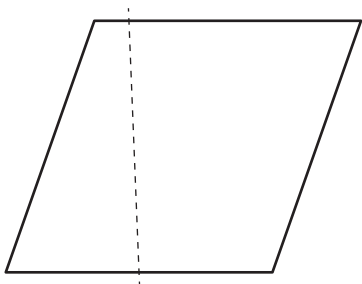
A.

B.

C.

D.

STOP.
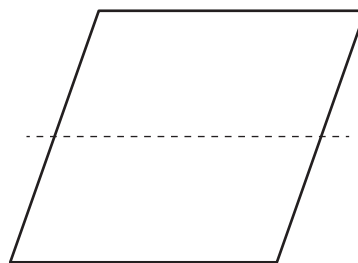
1. Select the **three** fractions that are equivalent to $\frac{6}{9}$.

   A. $\frac{2}{3}$

   B. $\frac{3}{6}$

   C. $\frac{4}{6}$

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

   E. $\frac{7}{10}$

   F. $\frac{8}{12}$

2. Katharine counts how many people are on the bus each day when she gets on. She counts this number for 20 days. She makes a frequency table to show her data.

People on the Bus Each Day

Number of People on Bus	Number of Days
4	3
5	1
6	8
7	5
8	3

Each statement below describes a specific value. Order the statements from the least value to the greatest value by writing the numbers of the statements in the boxes.

|		

least value   greatest value

1 **the range of the number of people on bus**

2 **the mode of the number of people on bus**

3 **the number of people on bus that occurs the least**

Go on to the next page.

3. Sara has 515 rocks in her rock collection. She wants to divide her rocks equally into 4 boxes. What is the fewest number of rocks that Sara could **not** put in boxes?

   A.   0

   B.   1

   C.   2

   D.   3

4. Ms. Li made a line plot showing the height of each student in her classroom.

Student Heights
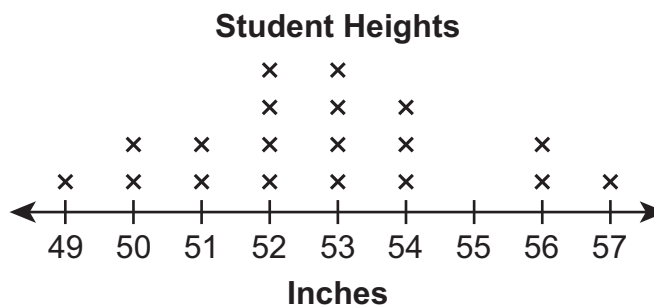
Inches

   Select the **two** heights, in inches, that are the modes of Ms. Li's data.

   A.   49

   B.   52

   C.   53

   D.   54

   E.   58

5. Miguel brings 3 pies to a bake sale. He sells $1\frac{3}{8}$ pies in the first hour of the bake sale and $1\frac{2}{8}$ pies in the second hour of the bake sale. What fraction describes the total number of pies Miguel sells in the first two hours of the bake sale?

Go on to the next page.

6. One ray of an angle is shown below. Use the protractor to draw another ray so that the angle formed by the two rays is 50°.
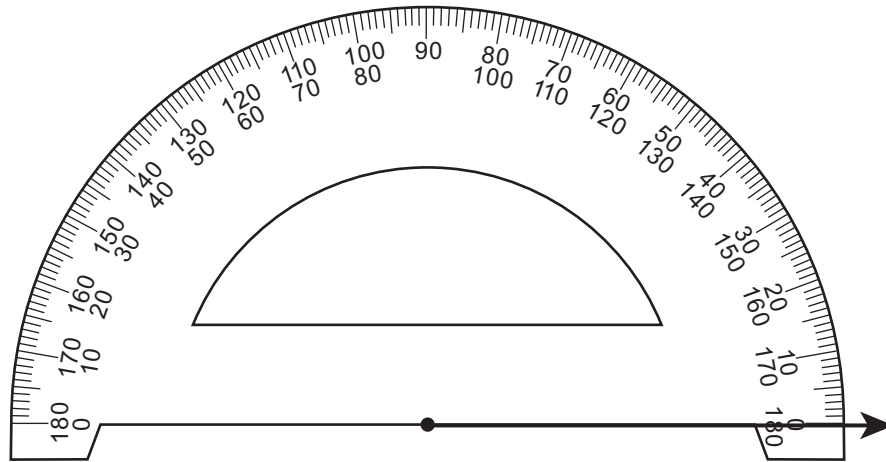
7. Rachel says that 2, 5, and 7 are all factors of her favorite number. Select the **three** statements that must be true about Rachel's favorite number.

   A. Rachel's favorite number must be 70.

   B. Rachel's favorite number must be even.

   C. Rachel's favorite number must end in a 5.

   D. Rachel's favorite number could have 10 as a factor.

   E. Rachel's favorite number must have at least one more factor.

   F. Rachel's favorite number could be either of 2 different numbers less than 100.

8. Last year, a museum had eighty-five thousand twenty visitors. What is the number of visitors the museum had last year as a base ten numeral?
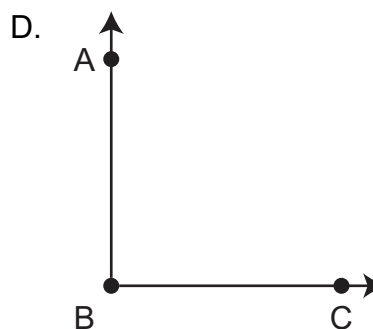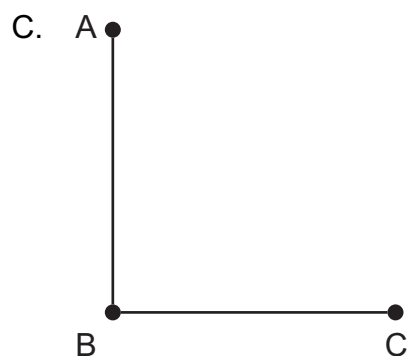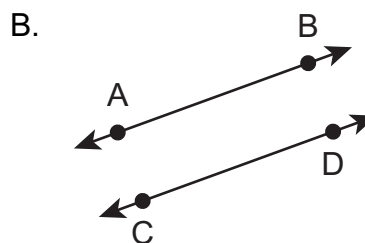
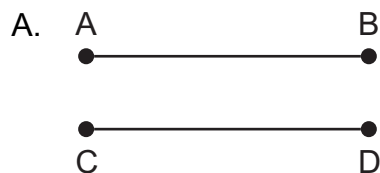**Go on to the next page.**

9. A model is shown.
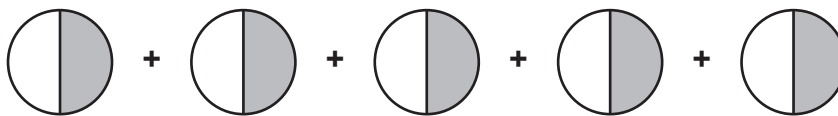
Which expression represents the model?

A. $\dfrac{5}{10}$

B. $\dfrac{1}{2} + 5$

C. $\dfrac{1}{2} \times \dfrac{1}{5}$

D. $\dfrac{1}{2} \times 5$

10. Which diagram shows two perpendicular line segments?

A.

B.

C.

D.

Go on to the next page.

11. The students and teachers at Maple Grove Elementary are going on a school trip. There are 16 school buses that are each taking 48 people on the trip. What is the total number of people on all 16 school buses?

    A. 288

    B. 336

    C. 728

    D. 768

12. Sam has $\frac{3}{4}$ gallon of milk. How many **pints** of milk does he have?

    A. 3

    B. 6

    C. 12

    D. 24

13. Suzie has 10 marbles and adds 2 marbles to her collection each week. Which pattern represents the number of marbles she has for week 0 through week 4?

    A. 2, 4, 6, 8, 10

    B. 2, 4, 8, 16, 32

    C. 10, 12, 14, 16, 18

    D. 10, 20, 40, 80, 160

14. The city of Franklin has a population of 46,578. The city of Valley Grove has a population of 51,926. Both populations are rounded to the nearest thousand. What is the **best** estimate for the combined population of the two cities?

    A. 90,000

    B. 97,000

    C. 99,000

    D. 100,000

Go on to the next page.

15. Ramon, Samantha, and Taj went to a picnic. They ate a total of $\frac{5}{8}$ pound of potato salad. To show the fraction of a pound of potato salad that each person could have eaten, Taj wrote the equation shown.

$$\frac{\square}{8} + \frac{\square}{8} + \frac{\square}{8} = \frac{5}{8}$$

Write a number from 1 to 8 in each box to show the fraction of a pound of potato salad that each person could have eaten.

$$\frac{\square}{8} + \frac{\square}{8} + \frac{\square}{8} = \frac{5}{8}$$

16. A school cafeteria prepared chicken nuggets for lunch. Each of 432 students was served 6 chicken nuggets. At the end of lunch, there were 43 chicken nuggets left unserved. How many chicken nuggets did the cafeteria prepare for lunch?

    A. 475
    B. 481
    C. 2,549
    D. 2,635

17. John decorates a poster in the shape shown.
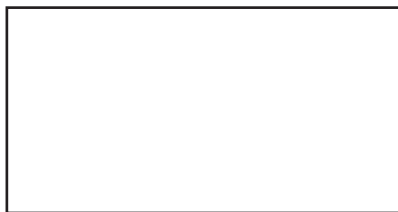
Select the **two** categories that describe the shape of John's poster.

    A. square

    B. triangle

    C. rhombus

    D. rectangle

    E. quadrilateral

Go on to the next page.

18. Jerry ran $\frac{4}{10}$ of a mile. Which number could Jerry use to show the distance, in miles, he ran?

    A. 0.04
    B. 0.4
    C. 4
    D. 14

19. Travis solves a math problem on a piece of paper. On the paper, Travis shows how he finds the perimeter of a rectangular poster by adding all four side lengths together—but the paper gets torn. Part of the piece of paper is shown.

    4 feet + 3 feet + 3 feet +

   What is the perimeter, in feet, of the poster?

    A. 10
    B. 12
    C. 13
    D. 14

Go on to the next page.

20. There are 13,517 students in the Anoka School District and 22,419 students in the Brower School District. Which statement about the number of students in the Anoka and Brower School Districts is true?

   A.   The number of students in the Anoka School District is less than the number of students in the Brower School District. The value of the tens place in the number of students in the Anoka School District is less than the value of the tens place in the number of students in the Brower School District.

   B.   The number of students in the Anoka School District is less than the number of students in the Brower School District. The value of the ten thousands place in the number of students in the Anoka School District is less than the value of the ten thousands place in the number of students in the Brower School District.

   C.   The number of students in the Anoka School District is greater than the number of students in the Brower School District. The value of the hundreds place in the number of students in the Anoka School District is greater than the value of the hundreds place in the number of students in the Brower School District.

   D.   The number of students in the Anoka School District is greater than the number of students in the Brower School District. The value of the thousands place in the number of students in the Anoka School District is greater than the value of the thousands place in the number of students in the Brower School District.

21. Sara used a total of 1 cup of liquid for a recipe. She used $\frac{2}{5}$ cup of vinegar, and the rest of the liquid she used was milk.
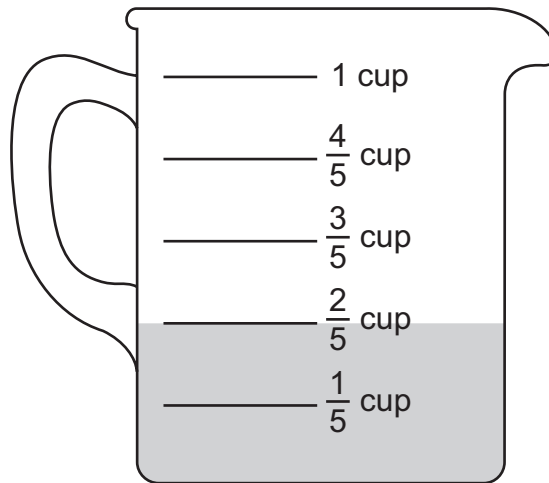
How much milk, in cups, did Sara use for the recipe?

A. $\frac{2}{5}$

B. $\frac{3}{5}$

C. $\frac{5}{5}$

D. $1\frac{2}{5}$

STOP.

1. Shapes A and B are shown.

    4

    4 | A | 4

    4

    6

    6 | B | 6

    6
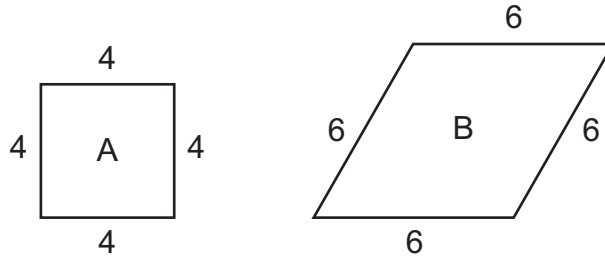
    A student makes the following three statements.

    1. Both shapes are rhombuses.
    2. Both shapes are rectangles.
    3. Both shapes are parallelograms.

    Explain why each statement is correct or incorrect.

Go on to the next page.

2. Laura uses a recipe to make salsa. The ingredients are shown.

- $\frac{6}{8}$ cup tomato sauce

- $\frac{4}{8}$ cup chopped tomatoes

- $\frac{7}{8}$ cup corn

- $\frac{6}{8}$ cup black beans

- $\frac{2}{8}$ cup chopped onion

- $\frac{1}{8}$ cup chopped green pepper

What is the total number of cups of ingredients in the salsa recipe? Show or explain your work.

STOP.

Math – Grade 4
Scoring Guide and Rubric

Session 1
All items worth 1 point

Item	Type	MLS	Answer
1	Multiple Choice	4.NF.C.11	D
2	Multi-Select Response	4.NBT.A.1	B and D
3	Multiple Choice	4.GM.C.6.a	D
4	Short Answer	4.RA.A.2	43
5	Technology Enhanced (Online) Constructed Response (Paper)	4.DS.A.1	One X above 4/8 and 6/8, Two X's above 5/8 and 1, Three X's above 7/8 (All correct to receive credit)
6	Multiple Choice	4.NF.B.5	B
7	Multiple Choice	4.NBT.A.5	A
8	Multiple Choice	4.RA.C.7	A
9	Multiple Choice	4.GM.A.2	C
10	Short Answer	4.NBT.A.6	11,436
11	Multiple Choice	4.NF.B.8	A
12	Multiple Choice	4.GM.B.5	A
13	Multiple Choice	4.NBT.A.4	B
14	Short Answer	4.NF.C.9	0.04 or equivalent decimal
15	Multiple Choice	4.RA.A.1	C
16	Multiple Choice	4.NBT.A.2	C
17	Short Answer	4.GM.C.8	22
18	Multi-Select Response	4.RA.B.5	C and E
19	Technology Enhanced (Online) Multi-Select Response (Paper)	4.NBT.A.3	1 and 0
20	Multiple Choice	4.NF.A.3	D
21	Multiple Choice	4.GM.A.3	A

Math – Grade 4
Scoring Guide and Rubric

Session 2

All items worth 1 point

Item	Type	MLS	Answer
1	Multi-Select Response	4.NF.A.2	A, C, F
2	Technology Enhanced (Online) Multi-Select Response (Paper)	4.DS.A.3	Least Value: 1, Middle Value: 3, Greatest Value: 2
3	Multiple Choice	4.RA.A.3	D
4	Multi-Select Response	4.DS.A.3	B and C
5	Short Answer	4.NF.B.6	21/8 or equivalent fraction
6	Technology Enhanced (Online) Constructed Response (Paper)	4.GM.B.5	Ray drawn at 50 degree angle
7	Multi-Select Response	4.RA.B.4	B, D, E
8	Short Answer	4.NBT.A.2	85,020
9	Multiple Choice	4.NF.B.7	D
10	Multiple Choice	4.GM.A.1	C
11	Multiple Choice	4.NBT.A.6	D
12	Multiple Choice	4.GM.C.6.a	B
13	Multiple Choice	4.RA.C.6	C
14	Multiple Choice	4.NBT.A.1	C
15	Technology Enhanced (Online) Constructed Response (Paper)	4.NF.B.5	1, 2, 2 in any order OR 1, 1, 3 in any order
16	Multiple Choice	4.RA.A.2	D
17	Multi-Select Response	4.GM.A.2	D and E
18	Multiple Choice	4.NF.C.9	B
19	Multiple Choice	4.GM.C.8	D
20	Multiple Choice	4.NBT.A.3	B
21	Multiple Choice	4.NF.B.4	B

Math – Grade 4
Scoring Guide and Rubric

Session 3

Item	Type	MLS	Answer
1	Performance Event	4.GM.A	**Exemplary Response** Statement 1 is correct because both shapes have four equal sides. Statement 2 is incorrect because Shape B does not have four right angles. Statement 3 is correct because both shapes have two pairs of parallel sides. **Scoring** **3 points available** 2 points: The student explains why statements 1 and 3 are correct and statement 2 is incorrect. 1 point: The student identifies statements 1 and 3 as correct and statement 2 as incorrect. Note: If the student explicitly identifies only the correct OR incorrect statements, credit should be given if the correctness or incorrectness of the other statements is implied.
2	Performance Event	4.NF.B	**Exemplary Response** The total number of cups of ingredients in the salsa recipe is the sum of all the fractions, which is 26/8 or 3 and 2/8 OR 3 and 1/4 cups. **Scoring** **3 points available** 2 points: The student shows or explains their work. 1 point: The student calculates that there are 3 and 1/4 cups of ingredients in the salsa recipe.