

# Grade 4 Mathematics

## SESSION 1

### DIRECTIONS

This session contains six multiple-choice questions, two short-answer questions, and two open-response questions.

- 1 Jane, Frank, and Denise each cut a length of ribbon.
- Jane's ribbon is 0.5 meter long.
  - Frank's ribbon is 0.39 meter long.
  - Denise's ribbon is 0.4 meter long.

Which statement about the lengths of the ribbons is true?

- A. Jane's ribbon is longer than Frank's ribbon.
- B. Denise's ribbon is longer than Jane's ribbon.
- C. Frank's ribbon is longest.
- D. Denise's ribbon is shortest.

- 2 Jessica is thinking of a number. She listed some of the factors of her number in the box shown below.

2, 3, 4, 6
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Which of the following could be Jessica's number?

- A. 12
- B. 14
- C. 16
- D. 18

Questions 3 and 4 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 3 In your Student Answer Booklet, draw two lines that are perpendicular.

- 4 Devin wrote a number in expanded form, as shown below.

$$500,000 + 90,000 + 3,000 + 20 + 8$$

Write Devin's number in standard form.

Question 5 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**

Write your answer to question 5 in the space provided in your Student Answer Booklet.

**5** Carl sold cookies and pies at a bake sale to earn money.

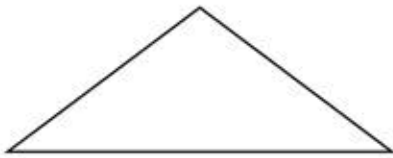
- A bag of cookies sells for \$3.
  - A pie sells for \$8.
- a. Carl sold 4 bags of cookies and 2 pies during the first hour of the bake sale. What is the total amount of money, in dollars, Carl earned during the first hour of the bake sale? Show or explain how you got your answer.
- b. Ms. O'Hara bought 2 bags of cookies and 1 pie from Carl. She paid with a \$20 bill. What is the total amount of change, in dollars, Ms. O'Hara should receive? Show or explain how you got your answer.

Vanessa sold cakes at the same bake sale.

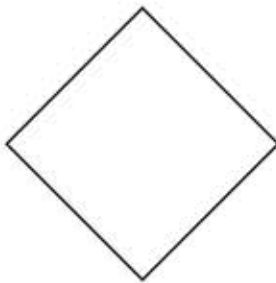
- c. Mr. Stanley bought 1 bag of cookies and 2 pies from Carl. Mr. Stanley also spent \$11 to buy a cake from Vanessa at the bake sale. Write an equation to show  $m$ , the total amount of money, in dollars, Mr. Stanley spent at the bake sale.
- d. Solve the equation you wrote in part (c) to find the total amount of money, in dollars, Mr. Stanley spent at the bake sale. Show your work.

6 Which of the following shapes has **exactly** two lines of symmetry?

A.



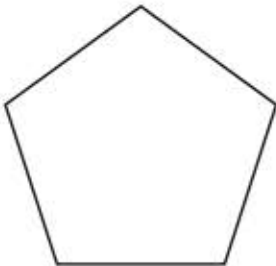
B.



C.



D.



7 When rounded to the nearest **thousand**, the number of people who attended a concert is 18,000.

Which of the following could be the number of people who attended the concert?

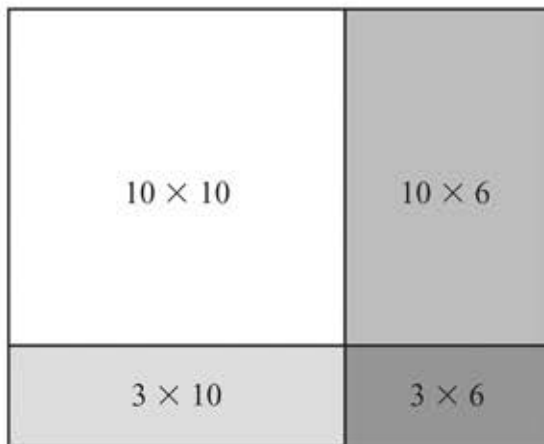
A. 17,264

B. 17,428

C. 18,135

D. 18,526

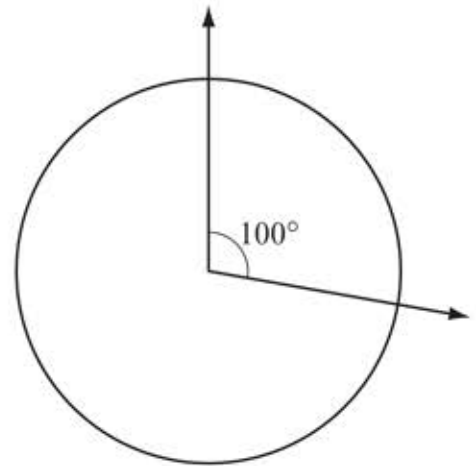
- 8 Nathan is using the area model below to solve a problem.



Which problem is represented by the whole area model?

- A.  $12 \times 6 = \square$
- B.  $16 \times 13 = \square$
- C.  $20 \times 9 = \square$
- D.  $60 \times 30 = \square$

- 9 Kendall drew a  $100^\circ$  angle from the center of a circle, as shown below.



What fraction of the circle does Kendall's angle turn through?

- A.  $\frac{100}{360}$
- B.  $\frac{100}{260}$
- C.  $\frac{100}{180}$
- D.  $\frac{100}{90}$

Question 10 is an open-response question.

- BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.

Write y

10 Erin uses  $\frac{2}{8}$  yard of string to make 1 bracelet. Erin will make 6 bracelets.

- a. How many yards of string will Erin use to make 6 bracelets? Show or explain how you got your answer.

Erin uses  $\frac{3}{8}$  yard of string to make 1 necklace. Erin will make 5 necklaces.

- b. How many yards of string will Erin use to make 5 necklaces? Show or explain how you got your answer.
- c. The total number of yards of string Erin will use for 6 bracelets and 5 necklaces is between what two whole numbers? Show or explain how you got your answer.

# Grade 4 Mathematics

## SESSION 2

### DIRECTIONS

11 Which of these numbers has a 5 whose value is ten times the value of the 5 in 7359?

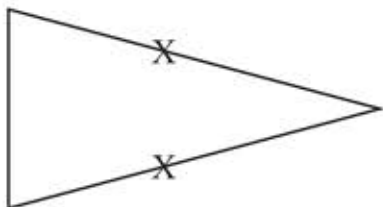
- A. 5268
- B. 4652
- C. 3005
- D. 2511

12 Darlene has 16 toy spiders. She has one-half as many toy beetles as she has toy spiders.

Which of the following equations can be used to find  $b$ , the total number of toy beetles Darlene has?

- A.  $16 - 2 = b$
- B.  $16 \div 2 = b$
- C.  $16 - \frac{1}{2} = b$
- D.  $16 \div \frac{1}{2} = b$

- 13 Gianna drew an X on two sides of a triangle, as shown below.



Which statement is true about the sides that Gianna drew an X on?

- A. The sides are parallel.
- B. The sides are perpendicular.
- C. The sides form an acute angle.
- D. The sides form an obtuse angle.

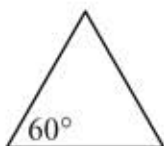
- 14 A class of 29 students is taking a field trip to the zoo. Each ticket to the zoo costs \$15.
- Which of these expressions can be used to find the total cost, in dollars, of the tickets to the zoo?

- A.  $(29 + 10) + (29 + 5)$
- B.  $(29 \times 10) + (29 \times 5)$
- C.  $(29 + 10) \times (29 + 5)$
- D.  $(29 \times 10) \times (29 \times 5)$



15 Which of these is a right triangle?

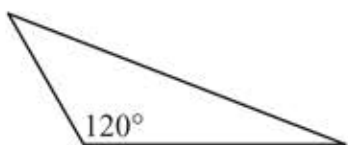
A.



B.



C.



D.



16 The recipe on a box of pancake mix tells how many cups of pancake mix are needed to make different numbers of pancakes, as shown in the table below.

**Pancake Recipe**

Cups of Pancake Mix	Number of Pancakes
1	8
2	16
3	24
4	32
5	
6	?

Based on the information in the table, how many pancakes can be made with 6 cups of pancake mix?

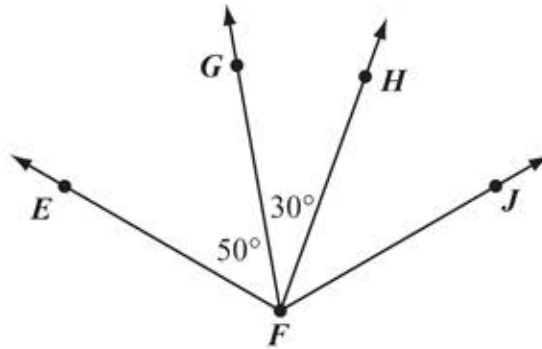
A. 39

B. 40

C. 46

D. 48

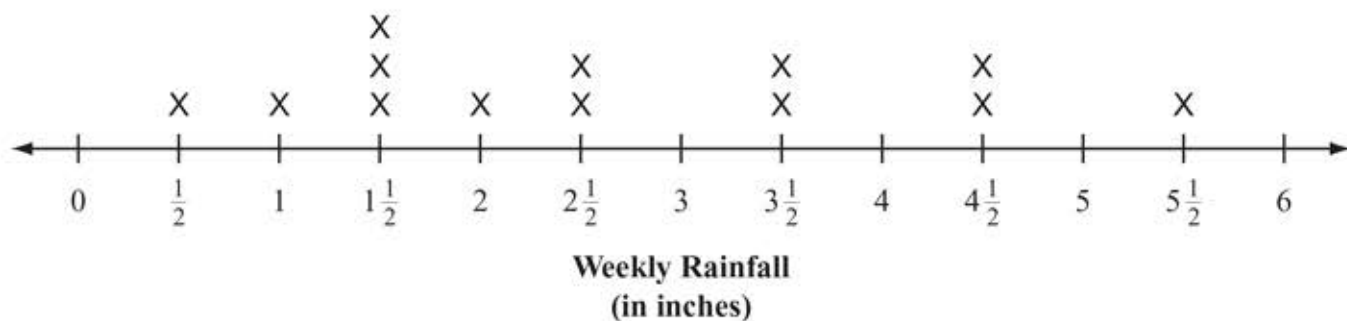
- 17 Some angles are shown in the diagram below.



Angle  $EFG$  has a measure of  $50^\circ$ , and angle  $GFH$  has a measure of  $30^\circ$ . The sum of the measures of angles  $EFG$ ,  $GFH$ , and  $HFJ$  is  $120^\circ$ .

What is the measure, in degrees, of angle  $HFJ$ ?

- 18 Brendan made a line plot showing the weekly rainfall, in inches, for his town one summer. His line plot is shown below.



Which of these expressions can Brendan use to find the difference, in inches, between the greatest weekly rainfall and the least weekly rainfall that he recorded for his town?

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

- 19 Jacob wrote the expression shown below.

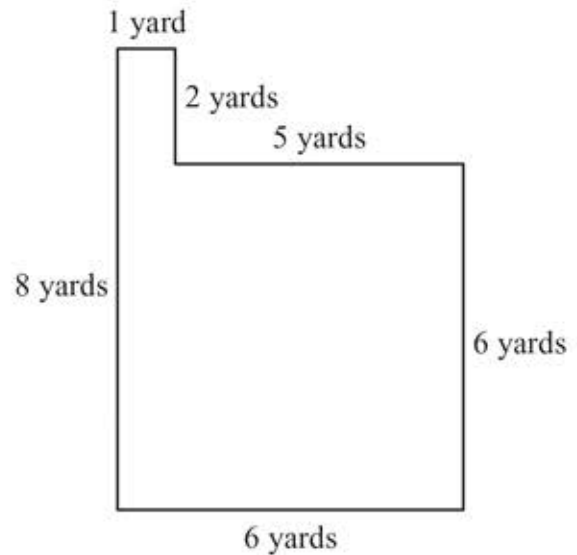
$$\frac{6}{10} + \frac{7}{100}$$

Which of these is equivalent to the expression Jacob wrote?

- A.  $\frac{6}{10} + \frac{7}{10}$
- B.  $\frac{60}{10} + \frac{7}{100}$
- C.  $\frac{60}{100} + \frac{7}{100}$
- D.  $\frac{60}{100} + \frac{70}{100}$

- 20 A diagram of Parvati's garden and the lengths of all its sides are shown below.

**Parvati's Garden**



Parvati wants to put a fence around her whole garden. What is the least number of yards of fence she will need?

- A. 24 yards
- B. 28 yards
- C. 36 yards
- D. 48 yards

21 Olivia's height is 1.34 meters. What is Olivia's height in **centimeters**?

- A. 0.0134 centimeter
- B. 0.134 centimeter
- C. 13.4 centimeters
- D. 134.0 centimeters

## Grade 4 Mathematics

### Reporting Categories, Standards, and Correct Answers\*

Item No.	Reporting Category	Standard	Correct Answer (MC/SA)*
1	<i>Number and Operations-Fractions</i>	NE.7	A
2	<i>Operations and Algebraic Thinking</i>	OA.4	A
3	<i>Geometry</i>	G.1	Two lines or line segments that are perpendicular
4	<i>Number and Operations In Base Ten</i>	NBT.2	593,028
5	<i>Operations and Algebraic Thinking</i>	OA.3	
6	<i>Geometry</i>	G.3	C
7	<i>Number and Operations In Base Ten</i>	NBT.3	C
8	<i>Number and Operations In Base Ten</i>	NBT.5	B
9	<i>Measurement and Data</i>	MD.5	A
10	<i>Number and Operations-Fractions</i>	NE.4	
11	<i>Number and Operations In Base Ten</i>	NBT.1	D
12	<i>Operations and Algebraic Thinking</i>	OA.2	B
13	<i>Geometry</i>	G.1	C
14	<i>Number and Operations In Base Ten</i>	NBT.5	B
15	<i>Geometry</i>	G.2	B
16	<i>Operations and Algebraic Thinking</i>	OA.5	D
17	<i>Measurement and Data</i>	MD.7	40 degrees
18	<i>Measurement and Data</i>	MD.4	B
19	<i>Number and Operations-Fractions</i>	NE.5	C
20	<i>Measurement and Data</i>	MD.3	B
21	<i>Measurement and Data</i>	MD.1	D

\* Answers are provided here for multiple-choice and short-answer items only. Sample responses and scoring guidelines for open-response items, which are indicated by the shaded cells,