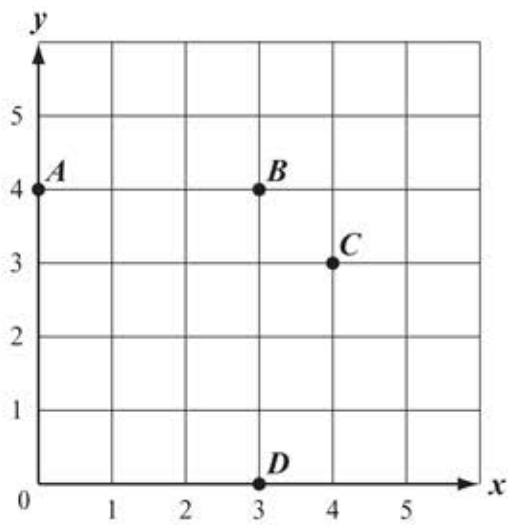
Grade 5 Mathematics

Session 1

DIRECTIONS

This session contains eight multiple-choice questions, two short-answer questions, and one open-response question.

1 Points A, B, C, and D are shown on the coordinate grid below.



What point represents the ordered pair (3, 4)?

A. point A

B. point B

C. point C

D. point D

2 A group of 5 campers used a total of 12 gallons of water on a camping trip. Each camper used the same amount of water.

How many gallons of water did each camper use?

A. $\frac{1}{12}$

B. $\frac{5}{12}$

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

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

3 The length of Eagle Trail is $6\frac{3}{5}$ miles.

The length of Bear Trail is $2\frac{7}{10}$ miles.

What is the difference in length between Eagle Trail and Bear Trail?

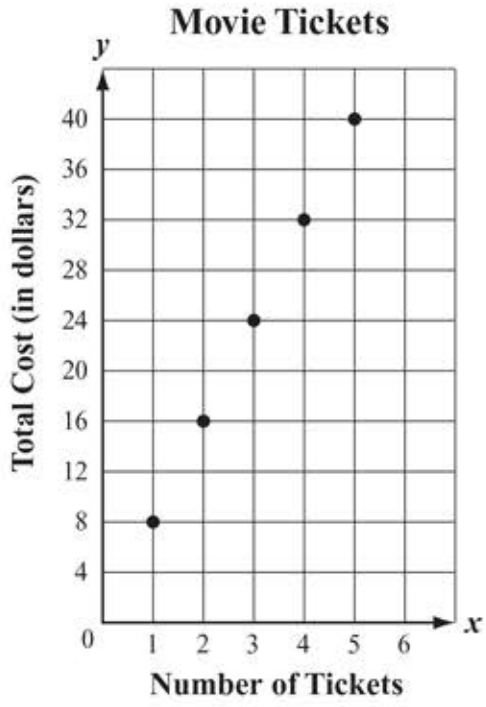
A. $3\frac{1}{10}$ miles

B. $3\frac{9}{10}$ miles

C. $4\frac{1}{10}$ miles

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

4 The graph below shows y, the total cost in dollars, for x tickets to a movie.



Based on the information in the graph, what would be the total cost for 6 movie tickets?

A. $24

B. $40

C. $48

D. $64

Questions 5 and 6 are short-answer questions.

5 A box is in the shape of a right rectangular prism. The base of the box has an area of 15 square inches. The height of the box is 12 inches.

What is the volume, in cubic inches, of the box?

6 Compute:

$$(9 + 2) \times (8 - 5)$$

7 Four students ran in a race. The table below shows the time it took each student to finish the race.

Race Finish Time

Name of Student	Time to Finish Race (in seconds)
Karla	15.700
Linda	16.005
Mary	15.095
Sofia	16.010

Which student took the **least** amount of time to finish the race?

A. Karla

B. Linda

C. Mary

D. Sofia

8 A farmer has 20 bins of apples. Each bin has 25 red apples and 30 green apples.

Which of the following expressions can be used to find the total number of apples in all the bins?

A. $20 + (25 \times 30)$

B. $20 \times (25 + 30)$

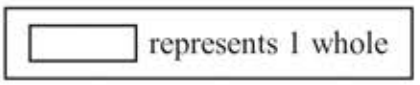
C. $(20 + 25) \times (20 + 30)$

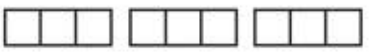
D. $(20 \times 25) \times (20 \times 30)$

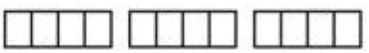
9 Aiesha made 4 quarts of applesauce. She will put the applesauce in jars that hold $\frac{1}{3}$ quart each. Aiesha solved the equation below to find n, the number of jars she needs to hold all the applesauce.

$$4 \div \frac{1}{3} = n$$

Which of the following models **best** represents this equation?



A. 

B. 

C. 

D. 

10 Amal wrote the expression shown below.

$$5 \times \frac{4}{3}$$

Which of the following statements about the value of Amal's expression is true?

A. The value is between 6 and 7.

B. The value is between 5 and 6.

C. The value is between 4 and 5.

D. The value is between 3 and 4.

Question 11 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations)**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 11 in the space provided in your Student Answer Booklet.

11 Terry is making meatballs for a family dinner. He needs ground turkey and ground beef to make the meatballs.

Ground turkey costs $4.50 per pound. Terry buys 2.6 pounds of ground turkey.

a. What is the total cost, in dollars, for 2.6 pounds of ground turkey? Show or explain how you got your answer.

Terry needs 5.5 pounds of ground beef to make the meatballs. He has 2.75 pounds of ground beef at home.

b. What is the total number of pounds of ground beef that Terry needs to buy? Show or explain how you got your answer.

Terry has a total of 8.1 pounds of meat to make meatballs. He will use 0.3 pound of meat to make each meatball.

c. What is the total number of 0.3-pound meatballs Terry can make with 8.1 pounds of meat? Show or explain how you got your answer.

Grade 5 Mathematics

Session 2

DIRECTIONS

This session contains eight multiple-choice questions, one short-answer question, and one open-response question. Mark your answers to these questions in the spaces

12 Jean needs $2\frac{1}{2}$ cups of flour to make sugar cookies and $3\frac{1}{4}$ cups of flour to make peanut butter cookies.

What is the total number of cups of flour that Jean will need to make both kinds of cookies?

A. $5\frac{2}{6}$

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

C. $6\frac{2}{6}$

D. $6\frac{3}{4}$

13 Eric divided the sum of 5 and 7 by 6. Which of the following is another way to express Eric's calculations?

A. $(7 \times 6) \div 5$

B. $5 \div (7 \times 6)$

C. $(7 + 5) \div 6$

D. $6 \div (7 + 5)$

14 Jin had 60 stickers in her collection. She gave $\frac{3}{5}$ of the stickers to her friend.

How many stickers did Jin give to her friend?

A. 12

B. 20

C. 36

D. 40

15 Julie uses 4 green beads and 6 blue beads in each bracelet she makes. What is the total number of green beads Julie will use when she uses 24 blue beads?

A. 6

B. 10

C. 12

D. 16

Question 16 is a short-answer question.

16 A construction team uses 184 sheets of plywood for each house it builds. The team will build 12 houses this year.

What is the total number of sheets of plywood the team will use to build all 12 houses?

Question 17 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations)**
- **If you do the work in your head, explain in writing how you did the work.**

17 Yolanda took a bus to visit her grandmother for a four-day visit.

a. At the bus station she waited for $\frac{3}{4}$ of an hour until it was time to board the bus. How many minutes did Yolanda wait to board the bus? Show or explain how you got your answer.

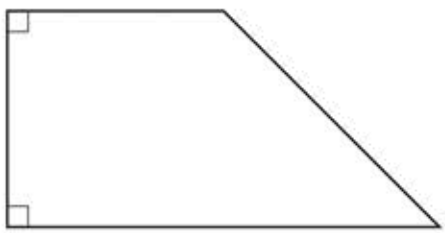
Yolanda brought a CD to listen to on the bus.

- The CD is 78 minutes long.
- The bus ride was $2\frac{1}{2}$ hours long.

b. How many minutes longer was the bus ride than the CD? Show or explain how you got your answer.

c. Yolanda wondered how many minutes are in 4 days. What is the total number of minutes in 4 days? Show or explain how you got your answer.

18 A diagram of a car window is shown below.



Which two words best describe the shape of the car window?

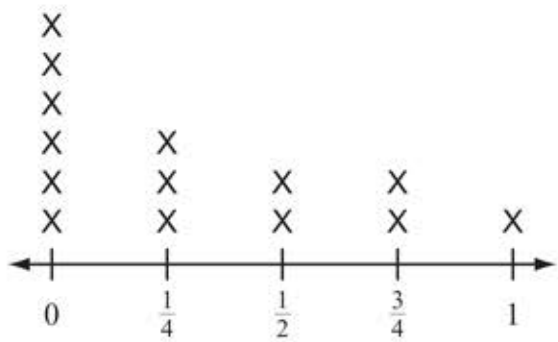
A. rectangle, rhombus

B. trapezoid, rectangle

C. rhombus, quadrilateral

D. quadrilateral, trapezoid

19 Josh measured the daily rainfall in his city for two weeks. He recorded the rainfall amounts to the nearest one-fourth inch on a line plot, as shown below.



Amount of Rainfall (inches)

What is the total amount of rainfall Josh recorded for the two weeks?

A. $2\frac{1}{2}$ inches

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

C. 8 inches

D. 14 inches

20 Which of the following expressions represents the number *one million*?

A. 10^8

B. 10^7

C. 10^6

D. 10^5

21 The expressions in the table below show the amount of money, in dollars, that Natalie and Drew each earned babysitting last week.

Earnings from Babysitting

Babysitter	Amount Earned (in dollars)
Natalie	$8 + 4 \times 15$
Drew	4×15

Based on the expressions in the table, which of the following statements is true?

A. Drew earned $4 less than Natalie.

B. Natalie earned $8 more than Drew.

C. Natalie earned 12 times as much as Drew.

D. Drew earned 4 times as much as Natalie.

Grade 5 Mathematics Reference Sheet

PERIMETER (P) FORMULAS

perimeter = distance around

square . . . . . $P = 4 \times s$
(s = length of a side)

rectangle . . . . . $P = (2 \times l) + (2 \times w)$
(l = length; w = width)

triangle . . . . . $P = a + b + c$
(a, b, and c are the lengths of the sides)

VOLUME (V) FORMULAS

rectangular prism . . . . . $V = l \times w \times h$
(l = length; w = width; h = height)

cube . . . . . $V = s \times s \times s$
(s = length of an edge)

AREA (A) FORMULAS

square . . . . . $A = s \times s$
(s = length of a side)

rectangle . . . . . $A = l \times w$
(l = length; w = width)

triangle . . . . . $A = \frac{1}{2} \times b \times h$
(b = length of the base;
h = height)

Grade 5 Mathematics

Reporting Categories, Standards, and Correct Answers*

Item No.		Reporting Category	Standard	Correct Answer (MC/SA)*
1		*Geometry*	G.1	B
2		*Number and Operations-Fractions*	NF.3	C
3		*Number and Operations-Fractions*	NF.1	B
4		*Geometry*	G.2	C
5		*Measurement and Data*	MD.5	180 cubic inches
6		*Operations and Algebraic Thinking*	OA.1	33
7		*Number and Operations In Base Ten*	NBT.3	C
8		*Operations and Algebraic Thinking*	OA.2	B
9		*Number and Operations-Fractions*	NF.7	C
10		*Number and Operations-Fractions*	NF.5	A
11		*Number and Operations In Base Ten*	NBT.7	
12		*Number and Operations-Fractions*	NF.2	B
13		*Operations and Algebraic Thinking*	OA.2	C
14		*Number and Operations-Fractions*	NF.6	C
15		*Operations and Algebraic Thinking*	OA.3	D
16		*Number and Operations In Base Ten*	NBT.5	2208
17		*Measurement and Data*	MD.1	
18		*Geometry*	G.4	D
19		*Measurement and Data*	MD.2	B
20		*Number and Operations In Base Ten*	NBT.2	C
21		*Operations and Algebraic Thinking*	OA.2	B

* 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,