PRACTICE TEST

Mathematics

Grade 4

_____

Student Name

_____

School Name

_____

District Name

desё MASSACHUSETTS
Department of Elementary
and Secondary Education

Grade 4 Mathematics
PRACTICE TEST

SESSION 1

This session contains 20 questions.

*You may **not** use a calculator during this session.*

Directions

Read each question carefully and then answer it as well as you can. You must record all answers in this Practice Test Booklet.

For some questions, you will mark your answers by filling in the circles in your Practice Test Booklet. Make sure you darken the circles completely. Do not make any marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely.

For other questions, you will need to fill in an answer grid. Directions for completing questions with answer grids are provided on the next page.

If a question asks you to show or explain your work, you must do so to receive full credit. Write your response in the space provided. Only responses written within the provided space will be scored.

Go On ➡

Directions for Completing Questions with Answer Grids

1.   Work the question and find an answer.

2.   Enter your answer in the answer boxes at the top of the answer grid.

3.   Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.

4.   Under each answer box, fill in the circle that matches the number or symbol you wrote above. Make a solid mark that completely fills the circle.

5.   Do not fill in a circle under an unused answer box.

6.   If you need to change an answer, be sure to erase your first answer completely.

7.   See below for examples of how to correctly complete an answer grid.

Examples

Go On ➡

1 Takara is 4 years old. Her brother is 2 times as old as Takara.

Which equation can be used to find *b*, the age in years of Takara's brother?

Ⓐ $b = 1 \times 2$

Ⓑ $b = 2 \times 2$

Ⓒ $b = 4 \times 2$

Ⓓ $b = 8 \times 2$

2 The shaded portion of this model represents a fraction less than 1.

represents 1 whole
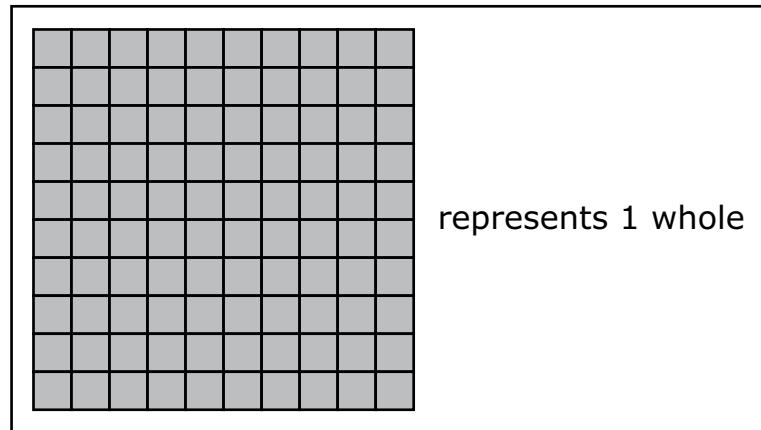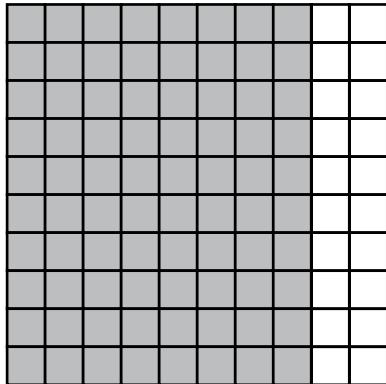
Which of these decimals are equivalent to the fraction represented in the model?

Select the **two** correct answers.

Ⓐ 0.80

Ⓑ 8.0

Ⓒ 0.08

Ⓓ 80.0

Ⓔ 0.8

Go On ➡

3   Lashawn knows this number sentence is true.

$$4 \times 7 = 28$$

What is the value of ? that makes this number sentence true?

$$4 \times 700 = \boxed{?}$$

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

4   This list shows the snowfall amounts, in inches, for eight towns during a storm.

$$2\frac{1}{4},\ 1\frac{1}{2},\ 2,\ 2\frac{3}{4},\ 1\frac{1}{2},\ \frac{3}{4},\ 2\frac{3}{4},\ 1\frac{1}{4}$$

This line plot also shows some of the snowfall amounts. One of the snowfall amounts is missing from the line plot.

Snowfall Amounts

Snowfall (inches)
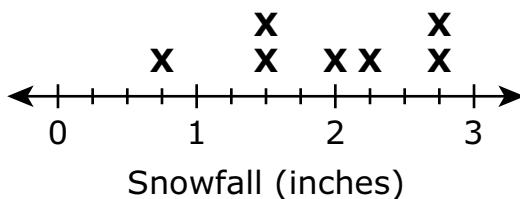
Which of these line plots shows all eight snowfall amounts correctly plotted?

Ⓐ   **Snowfall Amounts**

Snowfall (inches)

Ⓑ   **Snowfall Amounts**

Snowfall (inches)

Ⓒ   **Snowfall Amounts**

Snowfall (inches)

Ⓓ   **Snowfall Amounts**

Snowfall (inches)

Go On ➡
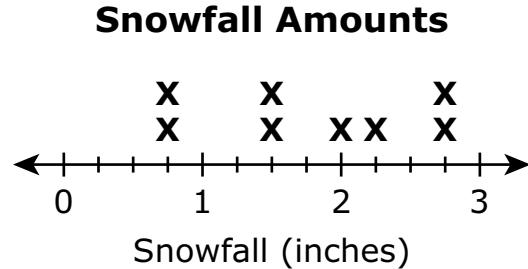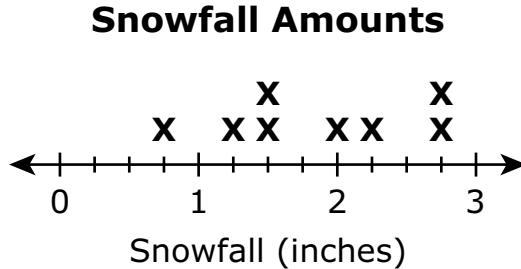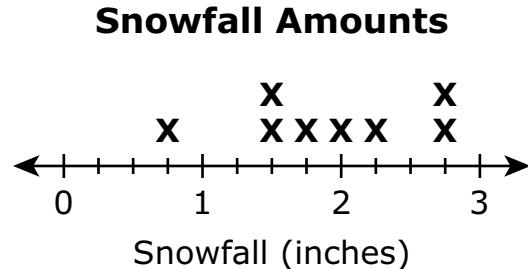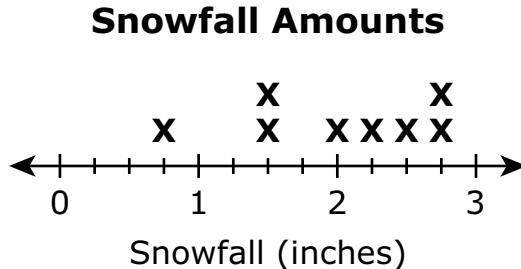
5 A student drew a pair of perpendicular lines on a grid.

Which of these grids shows the pair of lines the student drew?

Ⓐ

Ⓑ

Ⓒ

Ⓓ
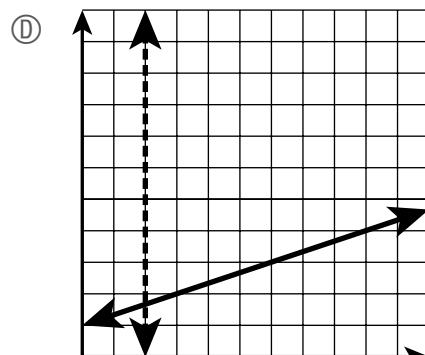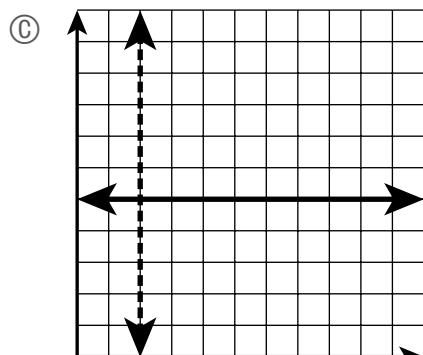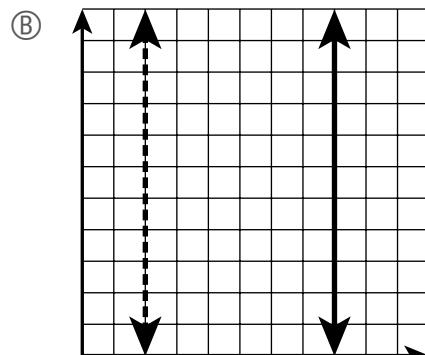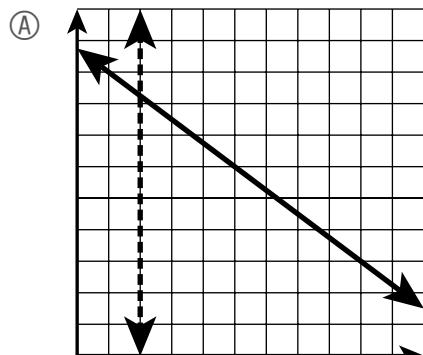
This question has four parts. Be sure to label each part of your response.

6 Four friends live in different towns. They each placed a bucket outside to collect rainwater on the same night. The four buckets were labeled A, B, C, and D.

A. Bucket A and Bucket B are the same size. This diagram shows the fraction of each bucket that was filled with rainwater.
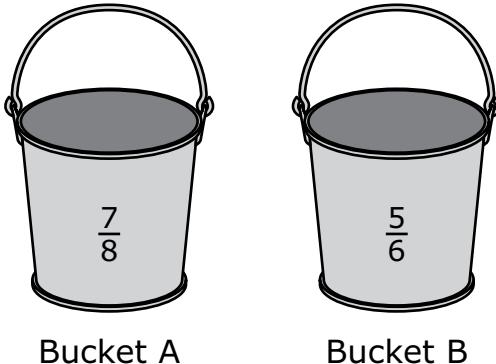
Bucket A   Bucket B

Write a number sentence using >, <, or = to compare the fraction of Bucket A that was filled to the fraction of Bucket B that was filled. Show or explain how you got your answer.

B. Bucket C and Bucket D are the same size. This diagram shows the fraction of each bucket that was filled with rainwater.
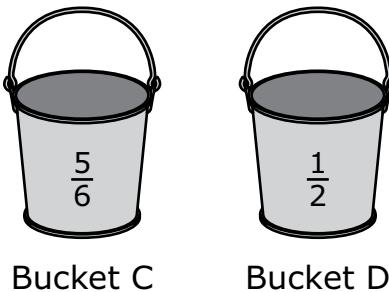

Bucket C   Bucket D

Which bucket, Bucket C or Bucket D, was filled with more rainwater? Explain how you got your answer.

C. This diagram shows all of the friends' buckets and the fraction of each bucket that was filled with rainwater.

| Bucket A | Bucket B | Bucket C | Bucket D |
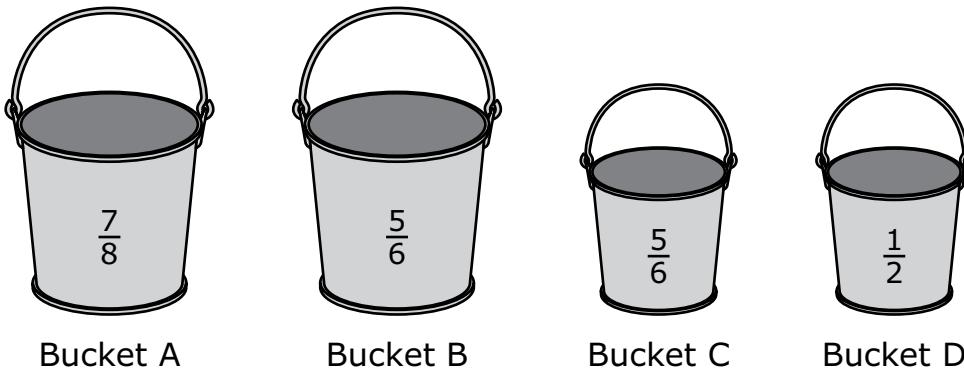
One of the friends says that Bucket B and Bucket C were filled with the same amount of rainwater since $\frac{5}{6}$ of each bucket was filled with rainwater.

Is the friend correct? Explain your reasoning.

D. A weatherman in another town says that his town received **less than** $\frac{1}{2}$ inch of rainwater.

Write a fraction that represents the amount of rainwater, in inches, this town could have received. Explain how you know your answer is correct.

Write your answers on the next page.

6

Go On ➡

7   Lily made some cookies, as shown.
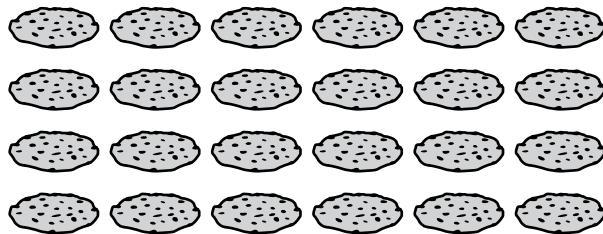
Lily made 2 times as many cookies as Tommy made. How many cookies did Tommy make?

Ⓐ   12

Ⓑ   24

Ⓒ   36

Ⓓ   48

8   *Use your ruler to answer question 8.*

A teacher drew a rectangle on the board, as shown.
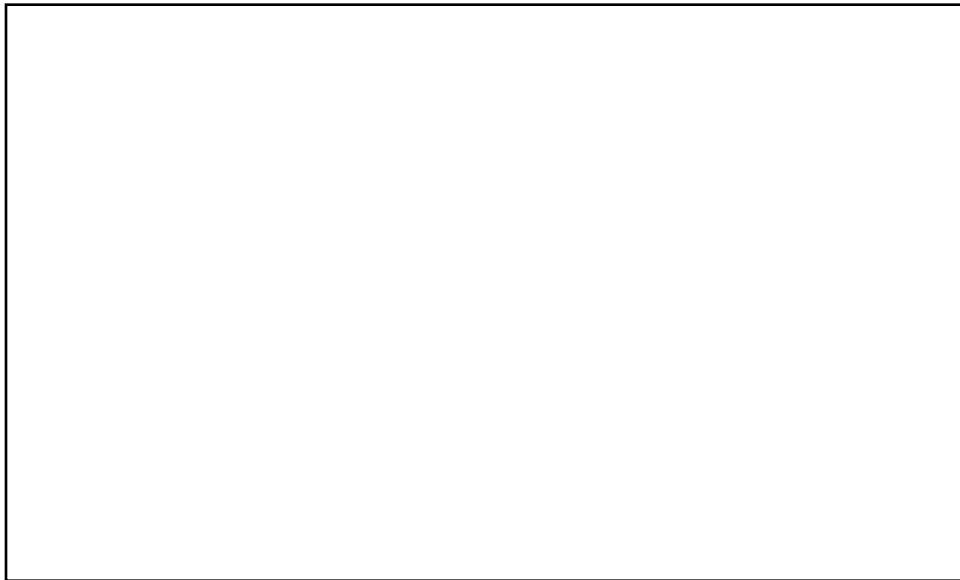
What is the area, in square inches, of the rectangle the teacher drew?

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

9   Katie's house is 0.70 mile from her school, as shown on this number line.

Katie's
house

School

Distance
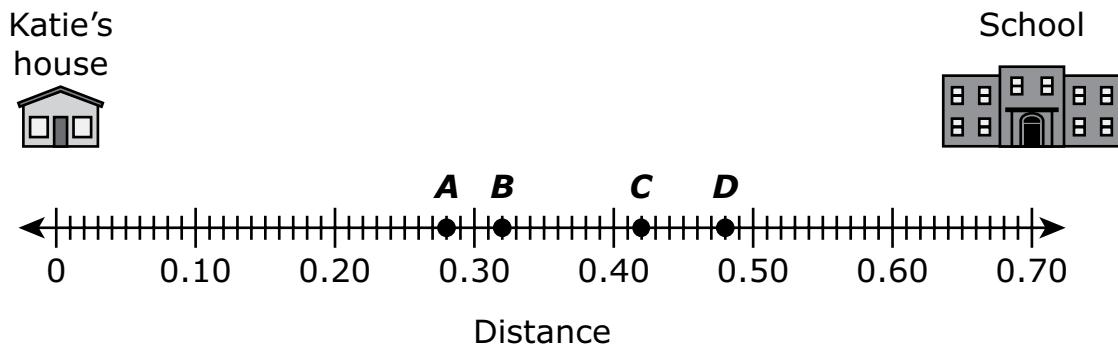
She passes a bakery on her way to school. The bakery is 0.28 mile from the school.

Which point on the number line represents the location of the bakery?

Ⓐ   Point A

Ⓑ   Point B

Ⓒ   Point C

Ⓓ   Point D

10 A family ordered a pizza. They ate $\frac{5}{6}$ of the pizza.

In which of these fraction models do the shaded parts represent the fraction of the pizza the family ate?

Ⓐ

Ⓑ

Ⓒ

Ⓓ
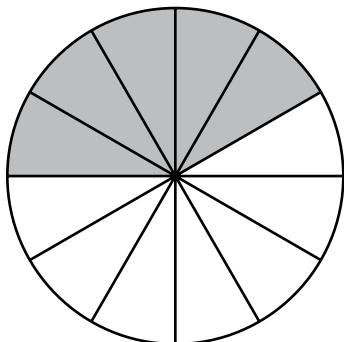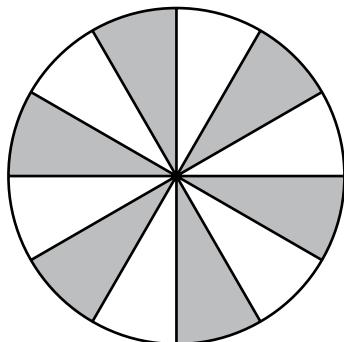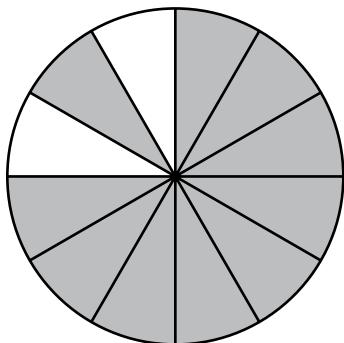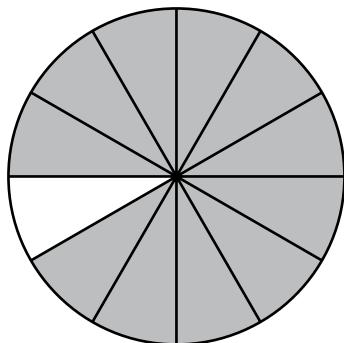
11 An expression is shown.

$$372,068 - 8,329$$

Which of these numbers is the difference of the expression?

Ⓐ 363,739

Ⓑ 364,341

Ⓒ 364,749

Ⓓ 366,341

12 Which of the following shapes has **more than** one line of symmetry?

Ⓐ

Ⓑ

Ⓒ

Ⓓ
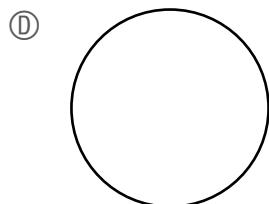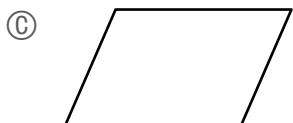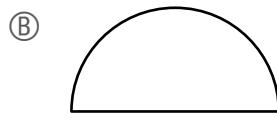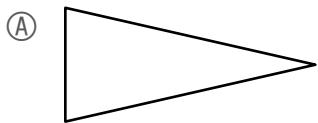
13 In which fraction model does the shaded part represent the sum of this expression?

$$\frac{1}{10} + \frac{7}{10}$$

Ⓐ

Ⓑ

Ⓒ

Ⓓ
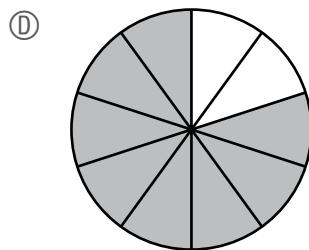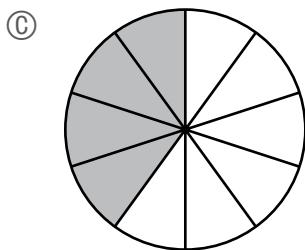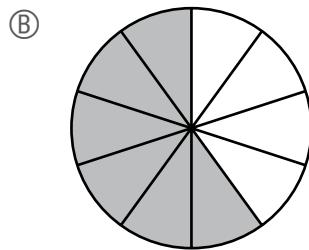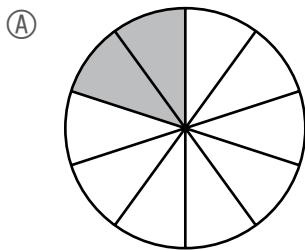
This question has four parts. Be sure to label each part of your response.

14 A student uses squares and triangles to make a pattern. In each step of the pattern, the student adds 1 square and 2 triangles, as shown.

Step 1   **Step 2**   **Step 3**
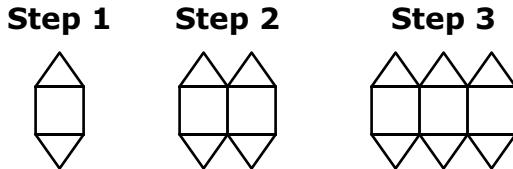
The student continues the pattern.

A. What is the total number of triangles in Step 4 of the pattern?

B. What is the total number of **squares** in Step 6 of the pattern? Explain how you know your answer is correct.

C. What is the total number of **triangles** in Step 9 of the pattern? Explain how you can get your answer by using multiplication.

D. One step in the pattern will have a total of 64 triangles.

   What is the total number of **squares** in that step? Show or explain how you got your answer.

Write your answers on the next page.

14

15 Which of these is the measure of an angle that turns through $\frac{1}{3}$ of a circle?

Ⓐ 45°

Ⓑ 90°

Ⓒ 120°

Ⓓ 180°

16 Which of these statements are correct?

Select the **three** correct answers.

Ⓐ $36 \div p = 4$ has a related multiplication fact of $p \times 4 = 36$.

Ⓑ $36 \div p = 4$ has a related multiplication fact of $36 \times p = 4$.

Ⓒ $s \div 7 = 5$ has a related multiplication fact of $s \times 5 = 7$.

Ⓓ $s \div 7 = 5$ has a related multiplication fact of $7 \times 5 = s$.

Ⓔ $72 \div 12 = a$ has a related multiplication fact of $a \times 12 = 72$.

Ⓕ $72 \div 12 = a$ has a related multiplication fact of $a \times 72 = 12$.

This question has two parts.

17   A teacher has two sets of stickers in different shapes to give to students.

Part A

The first set has five stickers.

Which of these stickers appear to have at least one obtuse angle?

Select the **two** correct answers.

Ⓐ

Congrats!

Ⓑ

Awesome
Teamwork!

Ⓒ

A+

Ⓓ

Great
Job!

Ⓔ

Way
to Go!
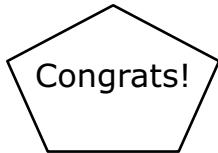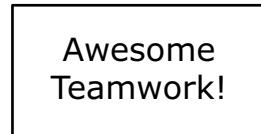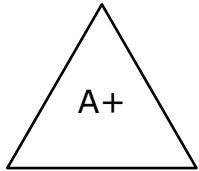
Part B

The second set has three triangle stickers, as shown.
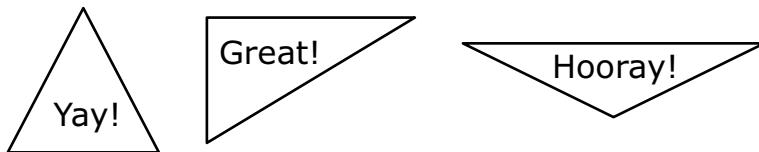
Which of these sentences correctly describes one of the stickers?

Ⓐ The "Yay!" sticker appears to be a right triangle because it has three right angles.

Ⓑ The "Great!" sticker appears to be a right triangle because it has one right angle.

Ⓒ The "Hooray!" sticker appears to be a right triangle because it has two right angles.

Ⓓ The "Hooray!" sticker appears to be a right triangle because it has one right angle.

18   There are 5 jugs on a table. Each jug is filled with $\frac{3}{4}$ gallon of water.

What is the total number of gallons of water in all of the jugs?

Ⓐ $\frac{15}{4}$

Ⓑ $\frac{23}{4}$

Ⓒ $\frac{3}{20}$

Ⓓ $\frac{15}{20}$

19   Abe has 16 pins in one box and 17 pins in another box. He is hanging posters with the pins. Abe uses 4 pins to hang each poster.

What is the total number of posters Abe can hang with the pins?

Ⓐ $\frac{23}{4}$ posters

Ⓑ $\frac{33}{4}$ posters

Ⓒ   8 posters

Ⓓ   9 posters

Go On ➡

20   Which of these statements about rounding the number 44,285 are true?

Select the **three** correct answers.

Ⓐ   44,285 rounded to the nearest **hundred** is 44,200.

Ⓑ   44,285 rounded to the nearest **hundred** is 44,300.

Ⓒ   44,285 rounded to the nearest **thousand** is 44,000.

Ⓓ   44,285 rounded to the nearest **thousand** is 45,000.

Ⓔ   44,285 rounded to the nearest **ten thousand** is 40,000.

Ⓕ   44,285 rounded to the nearest **ten thousand** is 50,000.

Grade 4 Mathematics

PRACTICE TEST

SESSION 2

This session contains 20 questions.

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Directions

Read each question carefully and then answer it as well as you can. You must record all answers in this Practice Test Booklet.

For some questions, you will mark your answers by filling in the circles in your Practice Test Booklet. Make sure you darken the circles completely. Do not make any marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely.

For other questions, you will need to fill in an answer grid. Directions for completing questions with answer grids are provided on the next page.

If a question asks you to show or explain your work, you must do so to receive full credit. Write your response in the space provided. Only responses written within the provided space will be scored.

Directions for Completing Questions with Answer Grids

1. Work the question and find an answer.

2. Enter your answer in the answer boxes at the top of the answer grid.

3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.

4. Under each answer box, fill in the circle that matches the number or symbol you wrote above. Make a solid mark that completely fills the circle.

5. Do not fill in a circle under an unused answer box.

6. If you need to change an answer, be sure to erase your first answer completely.

7. See below for examples of how to correctly complete an answer grid.

Examples

Go On ➡

21 A family ordered two pizzas for dinner. Both pizzas were the same size. Each slice of pizza was the same size.

This diagram shows the amount of pizza remaining after dinner.
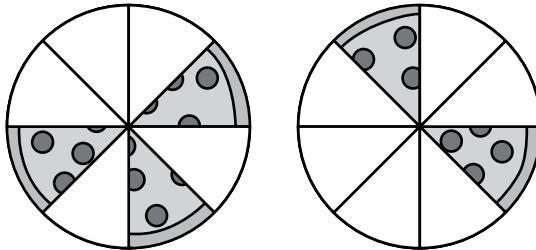
Which of these equations shows how to find the fraction of a whole pizza that was **remaining** after dinner?

Ⓐ $\frac{3}{5} + \frac{2}{6} = \frac{5}{11}$

Ⓑ $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

Ⓒ $\frac{5}{8} + \frac{6}{8} = \frac{11}{8}$

Ⓓ $\frac{3}{8} + \frac{2}{8} = \frac{5}{16}$

22 Two protractors are used to measure angle A and angle B, as shown.
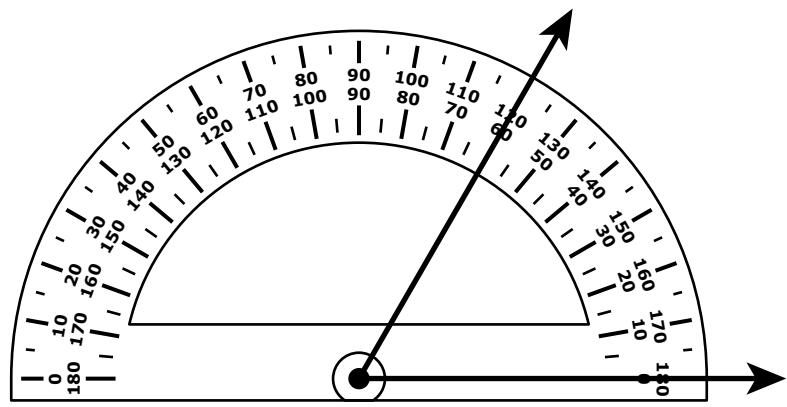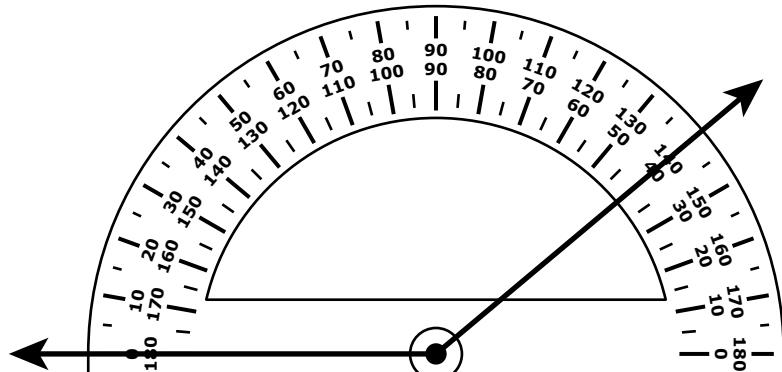
Angle A

Angle B

Which of these shows the measures of both angles?

Ⓐ angle A = 40°
    angle B = 120°

Ⓑ angle A = 140°
    angle B = 120°

Ⓒ angle A = 40°
    angle B = 60°

Ⓓ angle A = 140°
    angle B = 60°

23 In which of these numbers does the 7 have a value that is **ten** times the value of the 7 in 9,176?

Ⓐ 2,473

Ⓑ 3,724

Ⓒ 4,327

Ⓓ 7,432

24 A student created this figure by drawing line segments and angles.
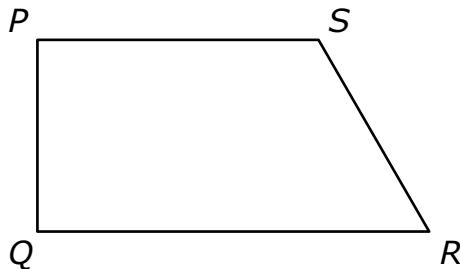
Which line segments and angles did the student use to create the figure?

Select the **two** correct answers.

Ⓐ line segment *PR*

Ⓑ line segment *PQ*

Ⓒ line segment *QS*

Ⓓ angle *SPQ*

Ⓔ angle *SQR*

Ⓕ angle *QSR*

Go On ➡

25 Which of these shows three comparison statements that are all true?

Ⓐ
```
0.54 > 0.65
 0.6 < 0.52
0.76 > 0.78
```

Ⓑ
```
0.54 > 0.52
 0.6 < 0.78
0.76 > 0.65
```

Ⓒ
```
0.54 > 0.52
 0.6 < 0.65
0.76 > 0.78
```

Ⓓ
```
0.54 > 0.78
 0.6 < 0.52
0.76 > 0.65
```

26 Alonzo and Mindy are buying pretzels to share with their class. They will put all the pretzels into bags.

- Alonzo buys 8 pretzels.

- Mindy buys 3 times as many pretzels as Alonzo.

- Each bag will hold up to 5 pretzels.

Alonzo and Mindy want to know the least number of bags they need to hold all the pretzels.

Which of these statements are true?

Select the **two** correct answers.

Ⓐ Alonzo and Mindy have a total of 24 pretzels.

Ⓑ Alonzo and Mindy have a total of 32 pretzels.

Ⓒ Alonzo and Mindy need 5 bags to hold all the pretzels.

Ⓓ Alonzo and Mindy need 6 bags to hold all the pretzels.

Ⓔ Alonzo and Mindy need 7 bags to hold all the pretzels.

Go On ➡

This question has four parts. Be sure to label each part of your response.

**27** There is a garden, a patio, and a flower bed in the backyard of a house. The garden, the patio, and the flower bed are each in the shape of a rectangle.

A. The garden has a length of 4 feet and a width of 8 feet, as shown in this diagram.

```
┌─────────────────────────┐
│                         │
│                         │  4 ft.
│                         │
└─────────────────────────┘
         8 ft.
```
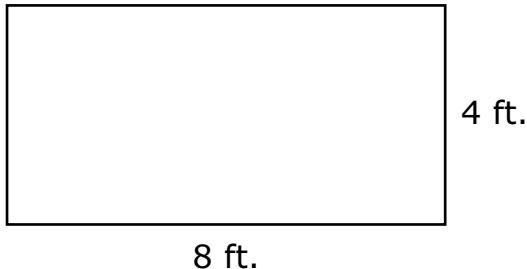
What is the area, in square feet, of the garden?

B. The patio has a length of 5 feet and an area of 35 square feet.

What is the width, in feet, of the patio? Show or explain how you got your answer.

C. The owner of the house thinks the garden and the patio have the same perimeter.

Is the owner correct? Explain your reasoning.

D. The area of the flower bed is **less than** the area of the garden. The perimeter of the flower bed is **equal** to the perimeter of the patio.

What could be the length **and** the width of the flower bed? Explain how you know your answer is correct.

┌───┐
│   │
│   **Write your answers on the next page.** │
│   │
└───┘

27

28   Which two fractions are equivalent?

Select the **two** correct answers.

   Ⓐ $\dfrac{4}{1}$

   Ⓑ $\dfrac{40}{1}$

   Ⓒ $\dfrac{4}{10}$

   Ⓓ $\dfrac{4}{100}$

   Ⓔ $\dfrac{40}{100}$

29 Which of these shapes appears to be a quadrilateral with perpendicular sides?

Ⓐ

Ⓑ

Ⓒ

Ⓓ
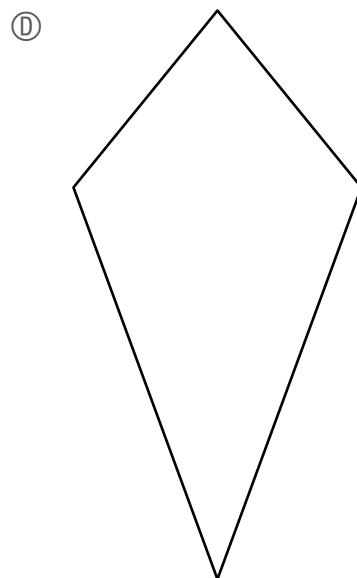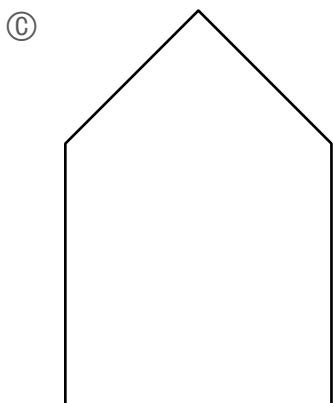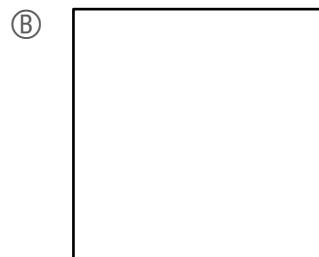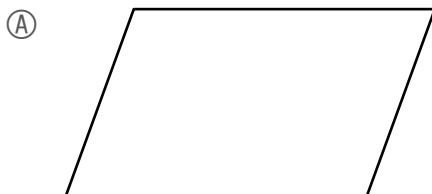
**30** What is *fourteen thousand, two hundred five* written in standard form?

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

31   A group of friends are going to eat lunch in the cafeteria.

- At the cafeteria, a boxed lunch costs $7.

- Each friend in the group will buy a boxed lunch.

Which of these could be the **total** cost to buy boxed lunches for all the friends in the group?

Ⓐ $62

Ⓑ $84

Ⓒ $93

Ⓓ $97

32   Some angle measures are shown in this diagram.
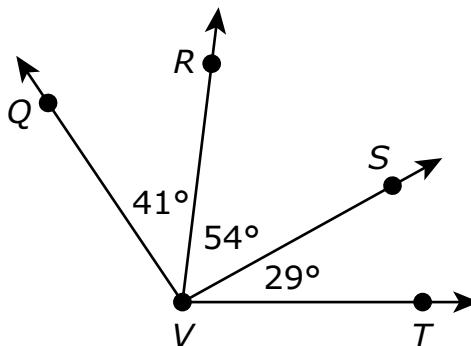
- Angle *QVR* has a measure of 41°.

- Angle *RVS* has a measure of 54°.

- Angle *SVT* has a measure of 29°.

Which of the following is the measure, in degrees, of angle *QVT*?

Ⓐ   124°   Ⓑ   114°

Ⓒ   95°   Ⓓ   83°

33   A parent bought equal amounts of blue cloth and yellow cloth to make a costume. The parent used $\frac{3}{6}$ of the blue cloth and $\frac{4}{12}$ of the yellow cloth.

Which of these number sentences correctly compare the fractions $\frac{3}{6}$ and $\frac{4}{12}$?

Select the **two** correct answers.

Ⓐ $\frac{3}{6} > \frac{4}{12}$

Ⓑ $\frac{3}{6} < \frac{4}{12}$

Ⓒ $\frac{4}{12} = \frac{3}{6}$

Ⓓ $\frac{4}{12} > \frac{3}{6}$

Ⓔ $\frac{4}{12} < \frac{3}{6}$

34   Diego solved math problems each day for one week.

- On the first day, he solved 10 math problems.
- On the second day, he solved 15 math problems.
- On the third day, he solved 20 math problems.

Each day, Diego continued to solve 5 more math problems than the day before. On which day did he solve 35 math problems?

Ⓐ   the fourth day

Ⓑ   the fifth day

Ⓒ   the sixth day

Ⓓ   the seventh day

This question has three parts. Be sure to label each part of your response.

35   A doctor works in her office 5 days each week. Each day she works, she drives a total of 19 miles to and from her office.

    A.   What is the total distance, in miles, the doctor drives to and from her office each week? Show or explain how you got your answer.

    B.   The doctor worked 48 weeks last year.

        What is the total distance, in miles, she drove to and from her office last year? Show or explain how you got your answer.

    C.   The doctor worked the same number of weeks each year for the last 7 years.

        What is the total distance, in miles, the doctor drove to and from her office over the last 7 years? Show or explain how you got your answer.

Write your answers on the next page.

35

36 A market sells beans in bags. Each bag has $\frac{3}{4}$ pound of beans. How many pounds of beans are in 8 bags altogether?

Ⓐ $2\frac{3}{4}$

Ⓑ 6

Ⓒ $8\frac{3}{4}$

Ⓓ 15

37 A metal bar has a mass of 5 kilograms.

Which of these is the mass, in **grams**, of the bar?

Ⓐ 50 grams

Ⓑ 500 grams

Ⓒ 5,000 grams

Ⓓ 50,000 grams

Go On ➡

This question has two parts.

38   A shopper bought peppers and grapes.

Part A

The shopper bought $\frac{54}{100}$ pound of peppers.

What is the decimal equivalent of the fraction $\frac{54}{100}$?

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

Part B

The shopper bought 0.62 pound of grapes.

Which of these number lines shows a point that represents where 0.62 is located?

Go On ➡
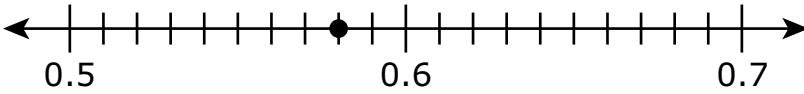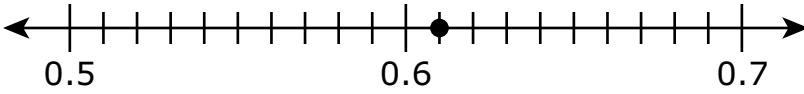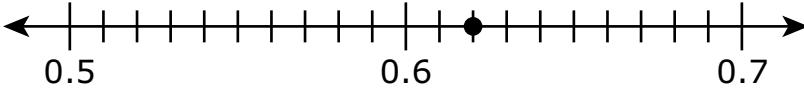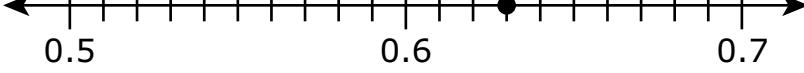
39 What is the value of ☐ that makes this number sentence true?

$$325 = 147 + \boxed{?}$$

Ⓐ 178

Ⓑ 188

Ⓒ 222

Ⓓ 472

40 A model of 1 whole is shown.

= 1 whole
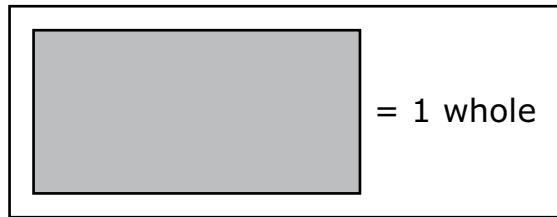
Based on the model, which of these models is shaded to represent a fraction that is equivalent to $1\frac{2}{3}$?

Ⓐ

Ⓑ

Ⓒ

Ⓓ