MASSACHUSETTS COMPREHENSIVE ASSESSMENT SYSTEM

PRACTICE TEST

Mathematics

Grade 3

Student Name

School Name

District Name

MASSACHUSETTS
Department of Elementary and Secondary Education

Grade 3 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.

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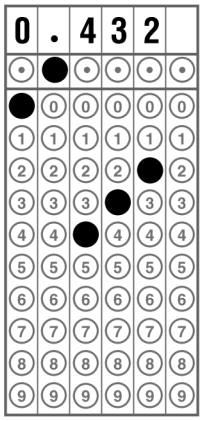
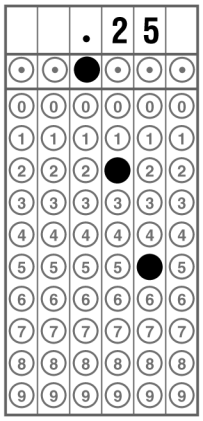
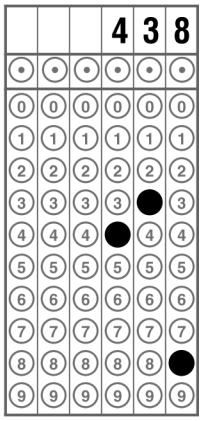
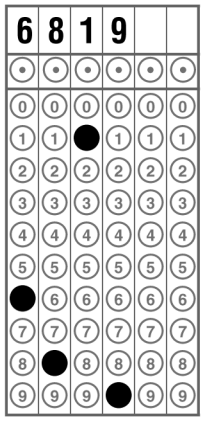
7. See below for examples of how to correctly complete an answer grid.

Examples









Go On ➡

1 Janette had 32 pencils to share with 4 friends. She gave each friend the same number of pencils.

What is the total number of pencils Janette gave each friend?

Ⓐ 36

Ⓑ 28

Ⓒ 8

Ⓓ 7

2 Brittany collected 351 box tops. Emily collected 198 box tops.

How many more box tops did Brittany collect than Emily?

Ⓐ 153

Ⓑ 247

Ⓒ 263

Ⓓ 549

3 Which of these comparisons is true?

Ⓐ $\frac{3}{6} > \frac{4}{6}$

Ⓑ $\frac{5}{6} > \frac{5}{4}$

Ⓒ $\frac{5}{8} > \frac{5}{6}$

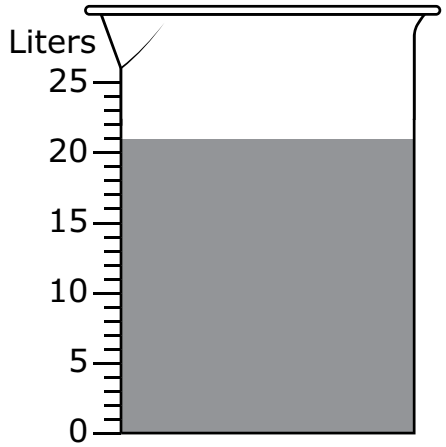
Ⓓ $\frac{6}{8} > \frac{5}{8}$

4 A gardener collected water from 7 different buckets in one large container.

- Each bucket had 3 liters of water.
- The gardener poured the water in all the buckets into the large container.

Which of these diagrams shows the total amount of water, in liters, in the large container after the gardener poured the water from the buckets into it?

Ⓐ



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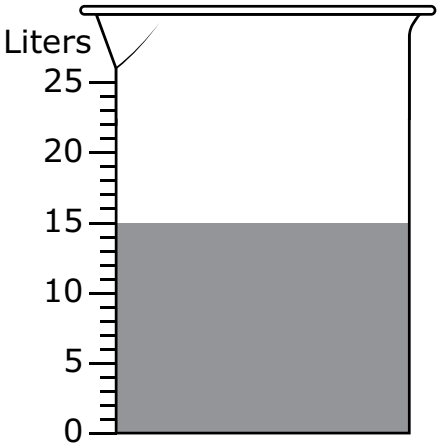

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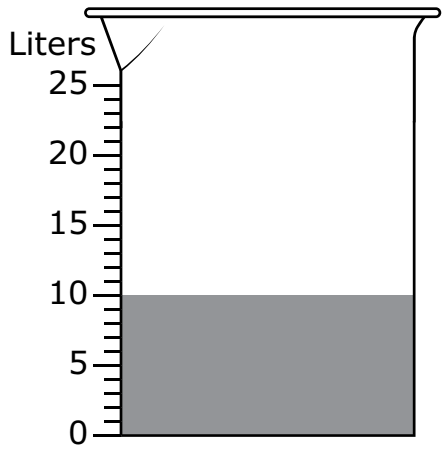

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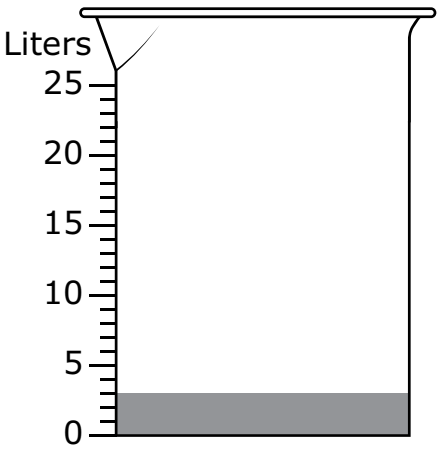


5 What is the missing number that makes this equation true?

$$8 \times \boxed{?} = 48$$

Ⓐ 6

Ⓑ 7

Ⓒ 40

Ⓓ 56

6 Which of these shapes has the same number of angles as a rhombus?

Ⓐ triangle

Ⓑ hexagon

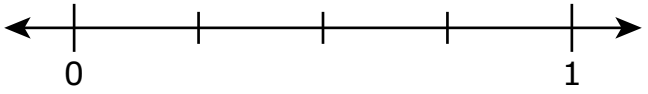
Ⓒ pentagon

Ⓓ rectangle

This question has three parts.

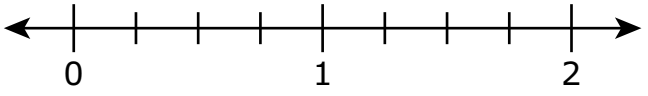
7 **Part A**

Plot the point that represents the location of $\frac{1}{4}$ on this number line.



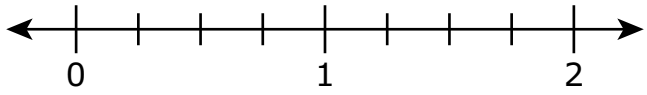
Part B

Plot the point that represents the location of $\frac{3}{4}$ on this number line.



Part C

Plot the point that represents the location of $\frac{7}{4}$ on this number line **and** explain how you know your answer is correct.



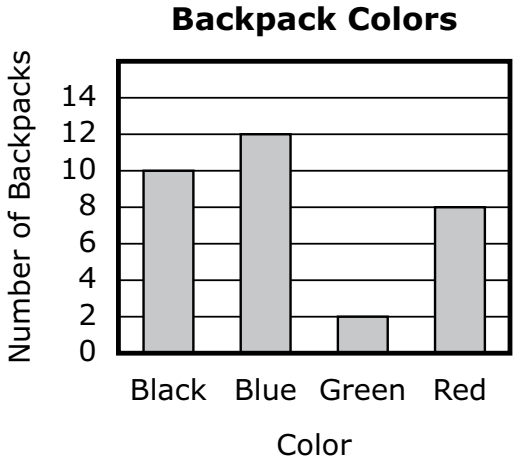
8 A teacher asked a group of students, "What color is your backpack?" The teacher recorded the total numbers for each color in the table shown.

Backpack Colors

Color	Number of Backpacks
Black	10
Blue	13
Green	2
Red	9

Which of these bar graphs shows the total number for each color in the teacher's table?

Ⓐ



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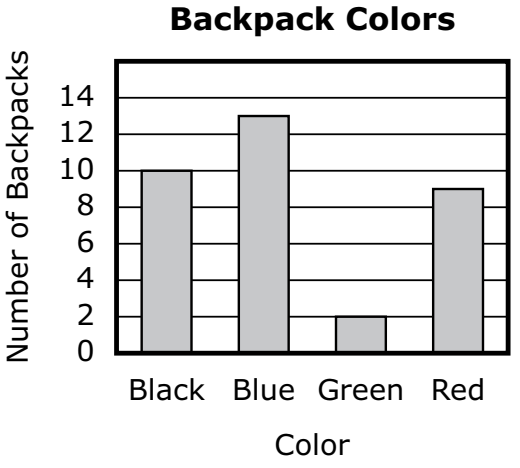

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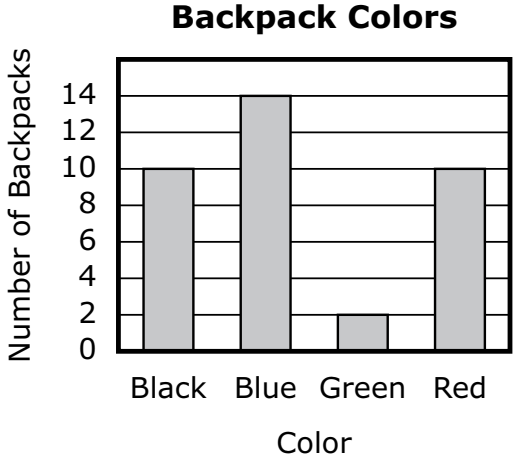

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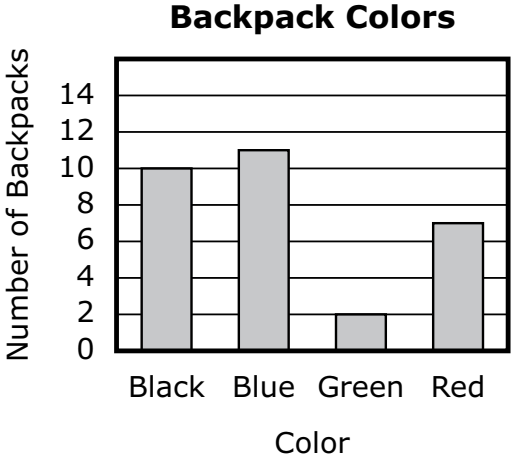


9 An index card is cut into 2 equal parts.

What fraction of the total area of the index card is **one** part?

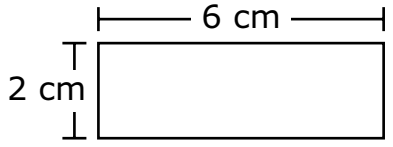
Ⓐ $\frac{1}{1}$

Ⓑ $\frac{2}{1}$

Ⓒ $\frac{1}{2}$

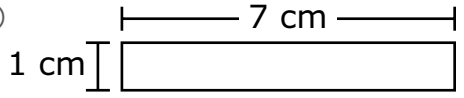
Ⓓ $\frac{2}{2}$

10 Quon drew a rectangle. The rectangle and its side lengths are shown.



Which of these rectangles has the **same** area as Quon's rectangle but a **different** perimeter?

Ⓐ



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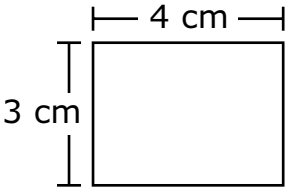

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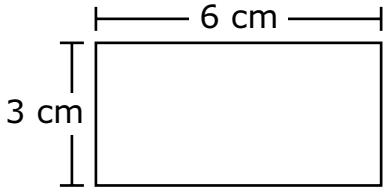

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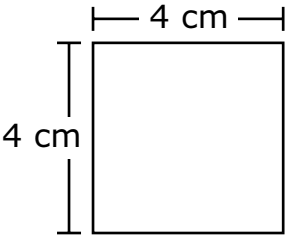


11 A student used multiplication to solve this division equation.

$$18 \div 3 = n$$

Which multiplication equation could the student have used to solve the division equation?

Ⓐ $18 \times 3 = n$

Ⓑ $n \times 18 = 3$

Ⓒ $n = 3 \times 18$

Ⓓ $18 = 3 \times n$

12 Cups of coffee were served at a parent meeting at a school. The number of cups served, rounded to the nearest **hundred**, was 200.

Which of these numbers could be the **actual** number of cups of coffee served?

Select the **two** correct answers.

Ⓐ 109

Ⓑ 267

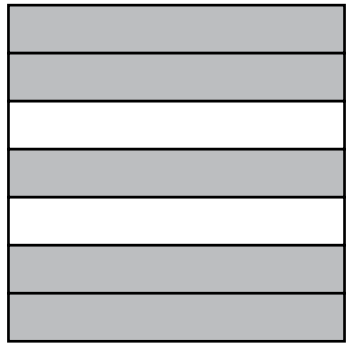
Ⓒ 152

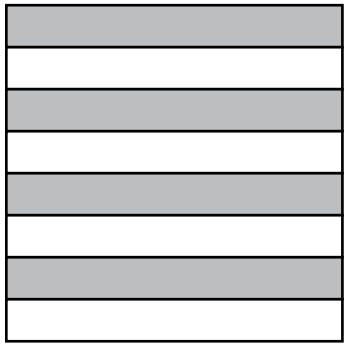
Ⓓ 254

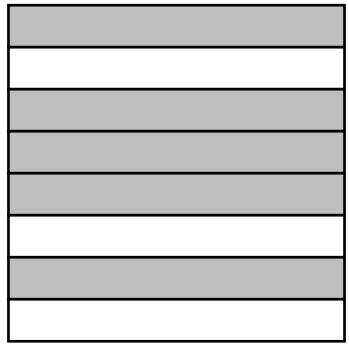
Ⓔ 231

13 Which of these fraction models shows $\frac{5}{8}$ of the model shaded?

Ⓐ 

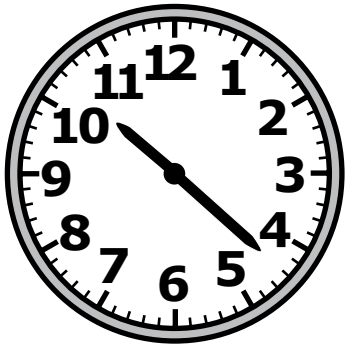
Ⓑ 

Ⓒ 

Ⓓ 

This question has three parts.

14 On Saturday morning, it started snowing at the time shown on this clock.



Part A

At what time did it start snowing on Saturday morning? Be sure to use a.m. or p.m. in your answer.

Part B

It stopped snowing on Saturday at the time shown on this clock.

What was the total number of minutes that it snowed on Saturday? Show or explain how you got your answer.

Part C

On Sunday, it started snowing at 11:35 a.m. It snowed for 83 minutes.

At what time did it stop snowing on Sunday? Be sure to use a.m. or p.m. in your answer. Show or explain how you got your answer.

15 Evan used exactly 20 paper clips to make an array.

Which of these could be the array Evan made?

Ⓐ 2 rows of 20 paper clips

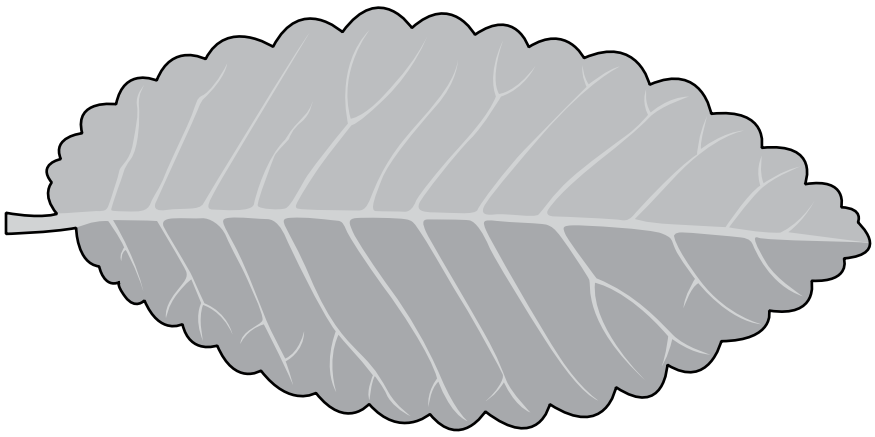
Ⓑ 4 rows of 6 paper clips

Ⓒ 5 rows of 4 paper clips

Ⓓ 10 rows of 10 paper clips

Use your ruler to answer question 16.

16 What is the length, to the nearest one-half inch, of this leaf?



Ⓐ $3\frac{1}{2}$ inches

Ⓑ 4 inches

Ⓒ $4\frac{1}{2}$ inches

Ⓓ 5 inches

17 Which of these expressions has a value **less than** 10?

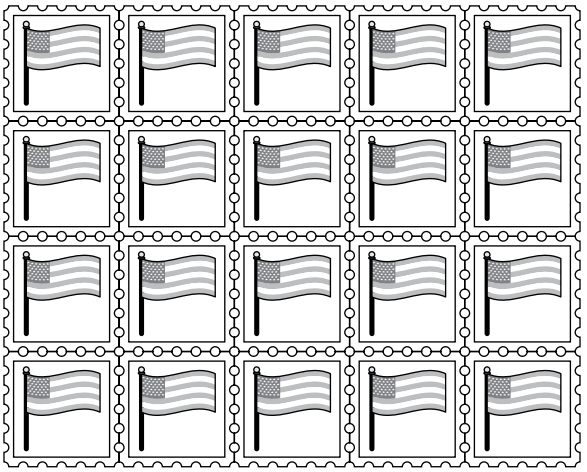
Ⓐ $5 \times 1 \times 2$

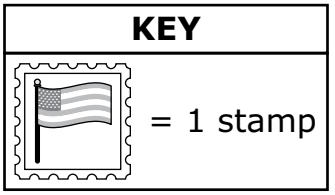
Ⓑ $5 \times 2 \times 2$

Ⓒ $10 \times 2 \times 1$

Ⓓ $10 \times 0 \times 2$

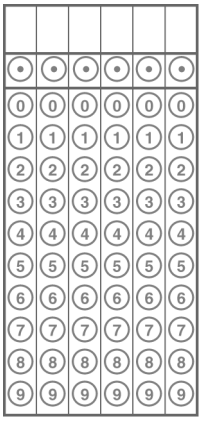
18 The post office sells pages of stamps. Each page has the same number of stamps. One page of stamps is shown.





Christa bought 6 pages of stamps. How many stamps did Christa buy in all?

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



19 The first four numbers in a pattern are shown.

39, 43, 47, 51, ?

Which of these sentences are true about the number pattern?

Select the **two** correct answers.

Ⓐ The rule for the pattern is "add 3."

Ⓑ The rule for the pattern is "add 4."

Ⓒ The rule for the pattern is "subtract 6."

Ⓓ The next number in the pattern is 45.

Ⓔ The next number in the pattern is 54.

Ⓕ The next number in the pattern is 55.

20 Which of these fractions is equivalent to $\frac{2}{4}$?

Ⓐ $\frac{2}{3}$

Ⓑ $\frac{3}{4}$

Ⓒ $\frac{6}{6}$

Ⓓ $\frac{4}{8}$

STOP!

Grade 3 Mathematics

PRACTICE TEST

SESSION 2

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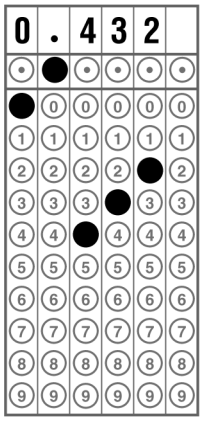
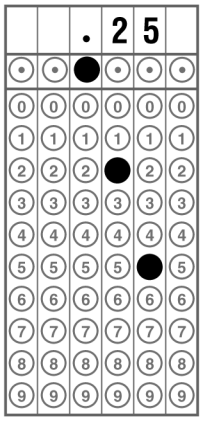
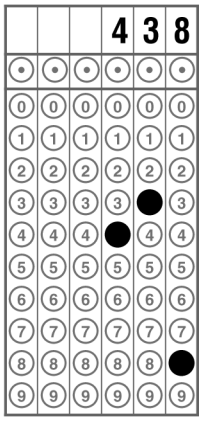
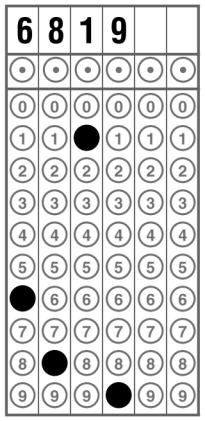
Examples









Go On ➡

21 Which of these equations are true?

Select the **three** correct answers.

Ⓐ $9 \times 8 = 72$

Ⓑ $9 \times 7 = 72$

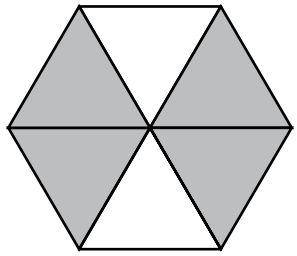
Ⓒ $35 \div 5 = 8$

Ⓓ $35 \div 5 = 7$

Ⓔ $9 \times 7 = 56$

Ⓕ $8 \times 7 = 56$

22 This shape is divided into equal parts.



Which of these fractions represents the part of the shape that is shaded?

Ⓐ $\frac{4}{6}$

Ⓑ $\frac{6}{4}$

Ⓒ $\frac{2}{4}$

Ⓓ $\frac{4}{2}$

23 This table shows the numbers of different types of sandwiches a restaurant sold for lunch.

Lunch Sandwiches Sold

Sandwich	Number Sold
Egg Salad	6
Grilled Cheese	12
Peanut Butter and Jelly	10

Which picture graph shows the information in the table? Be sure to use the key.

Key
Each ▢ = 2 sandwiches

Ⓐ **Lunch Sandwiches Sold**

Sandwich	Number Sold
Egg Salad	▢▢▢▢▢▢
Grilled Cheese	▢▢▢▢▢▢▢▢ ▢▢▢▢
Peanut Butter and Jelly	▢▢▢▢▢▢▢▢ ▢▢

Ⓑ **Lunch Sandwiches Sold**

Sandwich	Number Sold
Egg Salad	▢▢▢
Grilled Cheese	▢▢▢▢▢▢
Peanut Butter and Jelly	▢▢▢▢▢

Ⓒ **Lunch Sandwiches Sold**

Sandwich	Number Sold
Egg Salad	▢▢
Grilled Cheese	▢▢▢▢
Peanut Butter and Jelly	▢▢▢

Ⓓ **Lunch Sandwiches Sold**

Sandwich	Number Sold
Egg Salad	▢▢▢
Grilled Cheese	▢▢▢▢▢▢
Peanut Butter and Jelly	▢▢▢▢

24 There are 48 students in a library. The students are working in groups. Each group has 6 students.

Which equation can be used to find n, the number of groups of students working in the library?

Ⓐ $48 \div 6 = n$

Ⓑ $n \div 6 = 48$

Ⓒ $48 \times 6 = n$

Ⓓ $n \times 48 = 6$

25 Which sentence correctly compares the fractions $\frac{2}{8}$ and $\frac{2}{4}$?

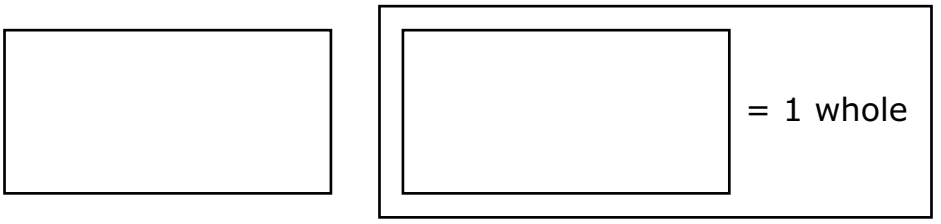
Ⓐ The fraction $\frac{2}{8}$ is equal to $\frac{2}{4}$ because both fractions have the same numerator.

Ⓑ The fraction $\frac{2}{4}$ is equal to $\frac{2}{8}$ because both fractions are equivalent to the fraction $\frac{1}{2}$.

Ⓒ The fraction $\frac{2}{8}$ is greater than $\frac{2}{4}$ because both fractions have the same numerator, and eighths are larger than fourths.

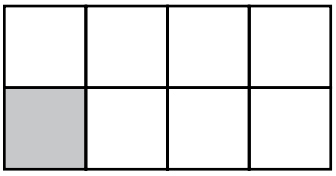
Ⓓ The fraction $\frac{2}{4}$ is greater than $\frac{2}{8}$ because both fractions have the same numerator, and fourths are larger than eighths.

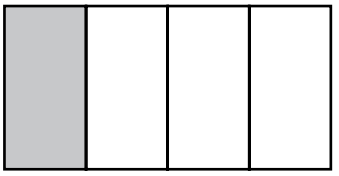
26 A student will shade $\frac{1}{8}$ of this figure.

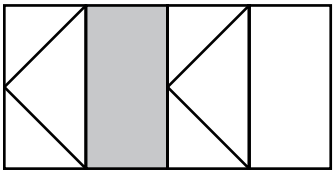


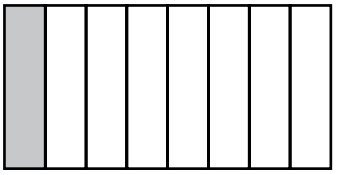
Which of these models have a shaded part that is $\frac{1}{8}$ the area of the whole figure?

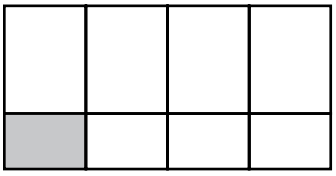
Select the **two** correct answers.

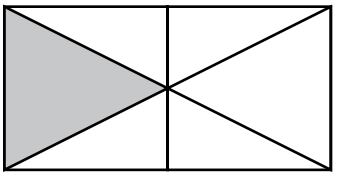
Ⓐ 

Ⓑ 

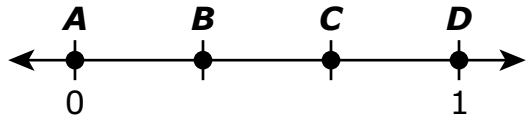
Ⓒ 

Ⓓ 

Ⓔ 

Ⓕ 

27 Which point represents the location of $\frac{2}{3}$ on this number line?



Ⓐ point A

Ⓑ point B

Ⓒ point C

Ⓓ point D

This question has three parts.

28 A student is rounding each number shown in the list in this box to the nearest **hundred**.

559, 637, 651, 648, 586

The student says, "Every number in the list rounds to 600."

Part A

Which number in the list makes the student's statement false? Explain how you know your answer is correct.

Part B

Write a **different** number that rounds to 600 when rounded to the nearest hundred. Do not repeat a number from the list.

Part C

What is the **least** number that rounds to 600 when rounded to the nearest hundred? Explain how you got your answer.

29 A student sold candy bars on Monday, Tuesday, and Wednesday.

- She sold a total of 125 candy bars over the three days.
- She sold 67 candy bars on Monday.
- She sold 19 candy bars on Tuesday.

What is the total number of candy bars the student sold on Wednesday?

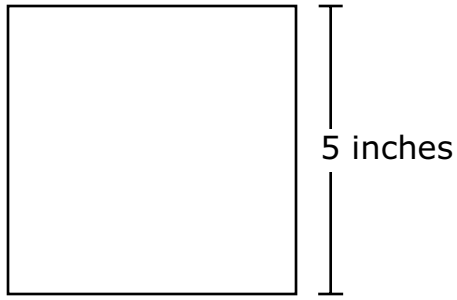
Ⓐ 39

Ⓑ 58

Ⓒ 86

Ⓓ 211

30 A builder is using square tiles to make a design. The design will have an area of 75 square inches. Each tile is the same size. One of the square tiles and its measurement is shown.



Which of these statements about the square tiles are true?

Select the **two** correct answers.

Ⓐ The area of each square tile is 20 square inches.

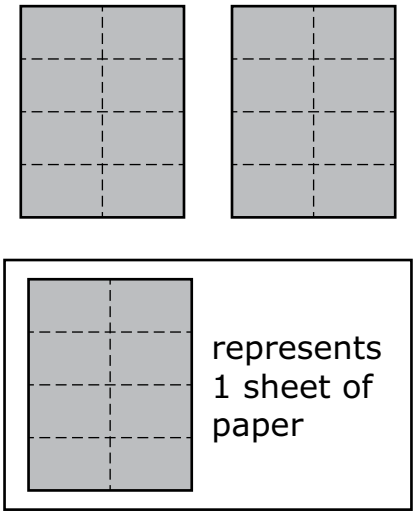
Ⓑ The area of each square tile is 25 square inches.

Ⓒ The length of each side of a square tile is 10 inches.

Ⓓ The builder will need 3 of the square tiles to make the design without gaps or overlaps.

Ⓔ The builder will need 4 of the square tiles to make the design without gaps or overlaps.

31 A student folded 2 sheets of paper along dotted lines, as shown.



Which of these fractions also shows how many sheets of paper the student folded?

Ⓐ $\frac{16}{8}$

Ⓑ $\frac{16}{2}$

Ⓒ $\frac{8}{8}$

Ⓓ $\frac{8}{2}$

32 Avery put 16 pictures into 2 groups. She put the same number of pictures into each group.

Which equation can be used to find p, the total number of pictures in each group?

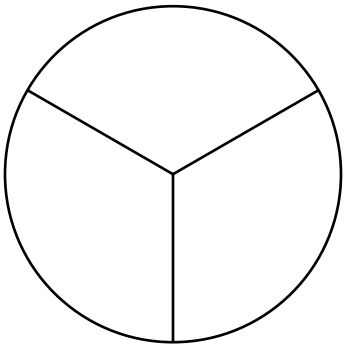
Ⓐ $16 + 2 = p$

Ⓑ $16 \times 2 = p$

Ⓒ $16 \div 2 = p$

Ⓓ $16 - 2 = p$

33 A circle is divided into equal parts, as shown.



Which fraction of the area of the whole circle is one part?

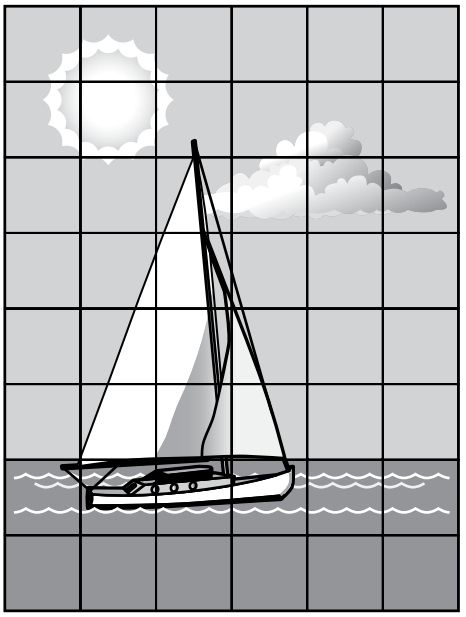
Ⓐ $\frac{1}{3}$

Ⓑ $\frac{2}{3}$

Ⓒ $\frac{3}{3}$

Ⓓ $\frac{4}{3}$

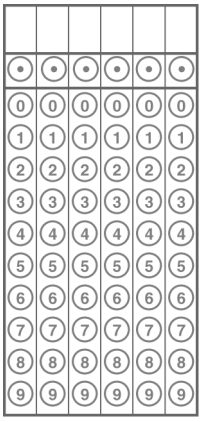
34 Taylor used 1-square-inch pieces to complete a puzzle, as shown.



KEY
= 1 square inch

What is the area, in square inches, of Taylor's puzzle?

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



This question has three parts.

35 Sergio and Tameka want to find the solution to this equation.

$$6 \times 15 = \boxed{?}$$

Part A

Which of the these expressions can Sergio use to help him find the solution to the equation?

Ⓐ $(2 + 15) + (4 + 15)$

Ⓑ $(6 \times 5) + (6 \times 10)$

Ⓒ $(6 \times 5) + (6 \times 7)$

Ⓓ $(6 \times 6) + (6 \times 7)$

Part B

What number belongs in the $\boxed{?}$ to make this equation true?

$$6 \times 15 = \boxed{?}$$

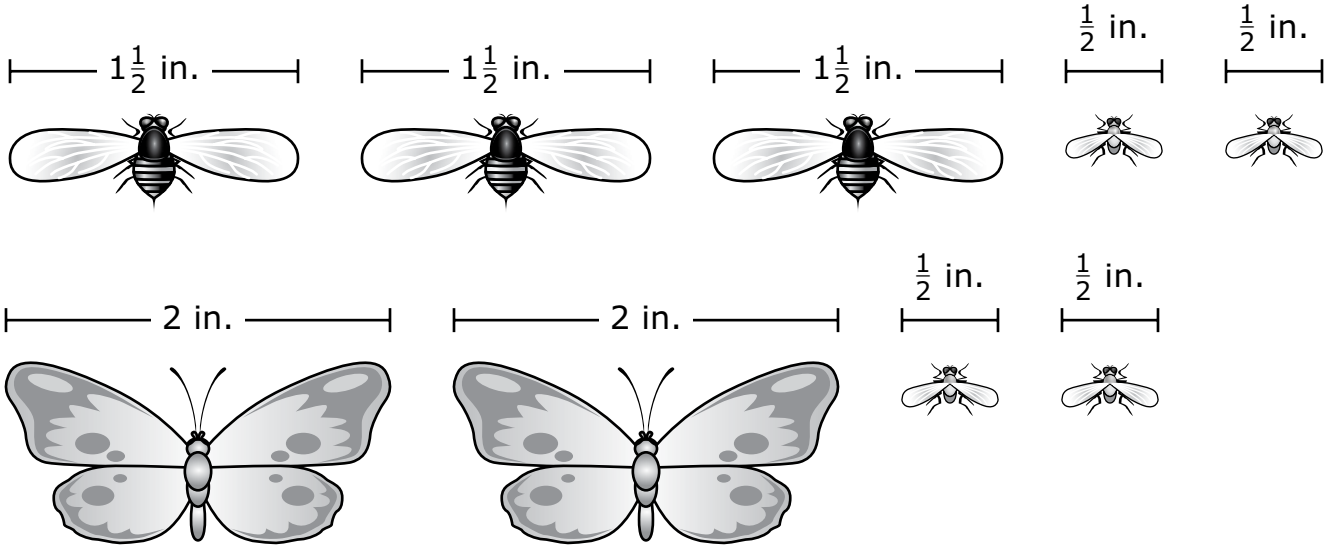
Part C

Tameka says she can use this expression to solve the same equation.

$$(6 \times 7) + (6 \times 8)$$

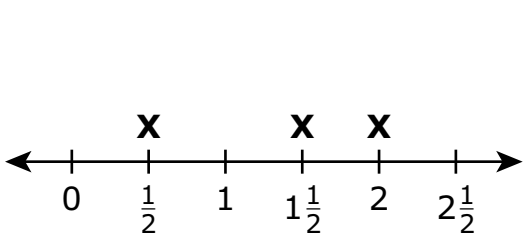
Is Tameka correct? Explain how you know whether she can use her expression to solve the same equation or not.

36 The widths, in inches, of some insects are shown.

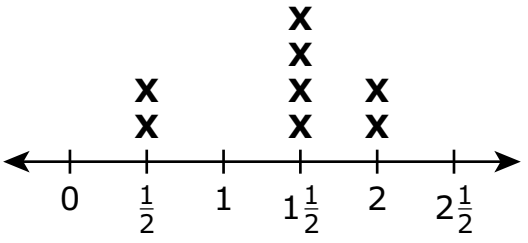


Which line plot shows the number of insects with each width?

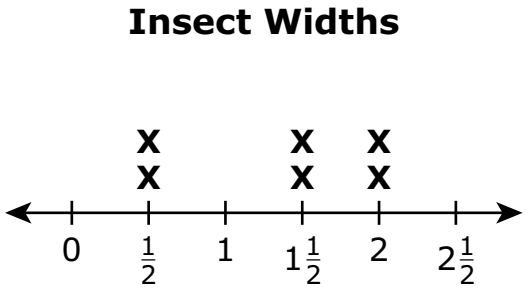
Ⓐ



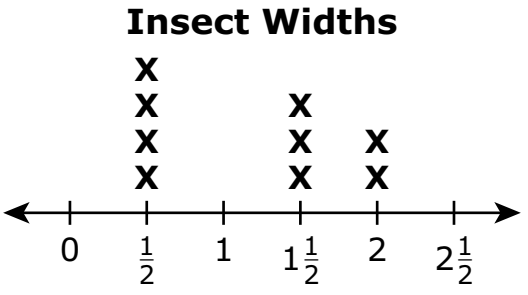
Ⓑ



Ⓒ

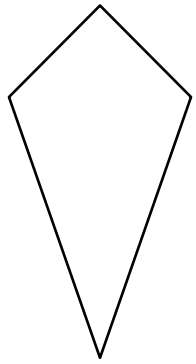


Ⓓ



37 Shape K is shown.

Shape K



Which of these shapes have the same number of sides as Shape K?

Select the **two** correct answers.

Ⓐ triangle

Ⓑ hexagon

Ⓒ rhombus

Ⓓ trapezoid

Ⓔ pentagon

38 A science class collected rocks in a park. The students put all of the rocks into 5 buckets. They put 70 rocks into each bucket.

What was the total number of rocks the students collected?

Ⓐ 350 rocks

Ⓑ 280 rocks

Ⓒ 35 rocks

Ⓓ 14 rocks

39 Which of these equations are true?

Select the **three** correct answers.

Ⓐ $40 \div 5 = 8$

Ⓑ $40 \div 5 = 9$

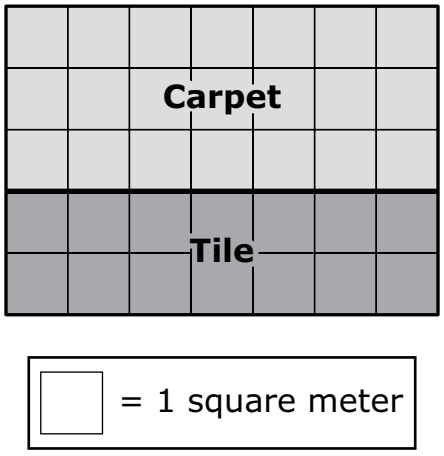
Ⓒ $72 \div 8 = 9$

Ⓓ $72 \div 8 = 7$

Ⓔ $81 \div 9 = 8$

Ⓕ $81 \div 9 = 9$

40 This drawing shows how a builder used both carpet and tile to cover the floor of a room with no gaps or overlaps.



Which expression can be used to find the total area, in square meters, of the floor of the room?

Ⓐ $(2 + 7) \times (3 + 7)$

Ⓑ $(4 \times 3) + (3 \times 2)$

Ⓒ $(5 \times 2) \times (2 \times 3)$

Ⓓ $(3 \times 7) + (2 \times 7)$

STOP!