Colorado Measures of Academic Success

Grade 3

Mathematics

Paper Practice Resource for Students

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The Colorado Measures of Academic Success (CMAS) is Colorado's standards-based assessment program designed to measure the Colorado Academic Standards (CAS) in the content areas of science, social studies, English language arts, and mathematics. The sample items included in this resource provide students with an opportunity to become familiar with the format of test items that appear in the paper-based test books.

While the use of the sample items is not required, it is strongly encouraged to help ensure students are familiar with the types of items they may encounter while taking the paper-based test.

The sample item sets in the CMAS Practice Resources are not intended to be representative of a complete unit or test, nor are they intended to cover all assessed content or item types. To view assessment frameworks, high level blueprints, scoring rubrics, evidence statements and standards for the CMAS assessments, visit: https://www.cde.state.co.us/assessment/cmas_testdesign.

Item Types:

Selected Response Items

Selected response items are multiple choice questions. To respond, the student indicates their response in an answer grid or by filling in the circle(s) next to their answer choice.

Correct Mark:

Incorrect Marks:

Constructed Response Items

Constructed response items are questions or prompts that require an independent, written response. To respond, the student writes his or her answer in the response box in the test book.

Converted Online Technology-Enhanced Item Types

Online technology-enhanced items converted to the paper testing format may ask students to:

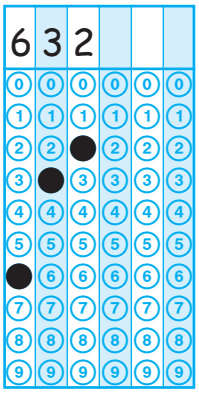
- Circle the correct answer
- Complete a table with checkmarks, Xs, or letters from a list of answer choices
- Fill in the blank
- Draw lines from boxes to correct answers
- Complete a bar graph or histogram
- Interact with a number line
- Graph points and lines on a coordinate grid
- Divide and shade shapes to indicate fractions

Directions for Completing the Answer Grids

1. Work the problem and find an answer.
2. Write your answer in the boxes at the top of the 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 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 box.
6. See below for examples on how to correctly complete an answer grid.

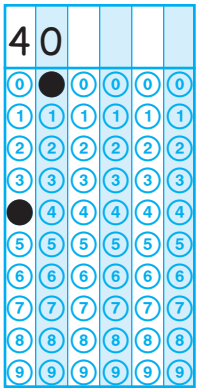
EXAMPLES

To answer 632 in a question, fill in the answer grid as shown below.



A brick path has 10 rows of 4 bricks. How many bricks are in the path?

Enter your answer in the box.



ITEM SET 1

1. What is the value of 921 – 92?

Enter your answer in the box.

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

2. Complete the equations.

Enter each answer in the space provided. Enter **only** your answers.

$7 \times 6 =$ _____

$32 \div 4 =$ _____

$9 \times 4 =$ _____

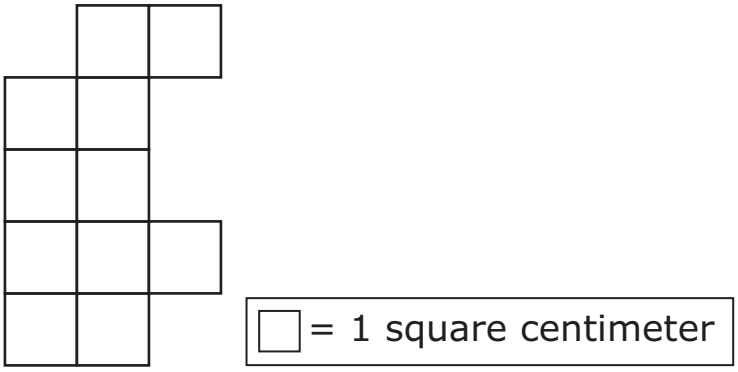
$36 \div 6 =$ _____

3. Three shapes are listed in the table.

Place a check mark (✔) to show what is true for **each** shape. Select one or more than one box per row.

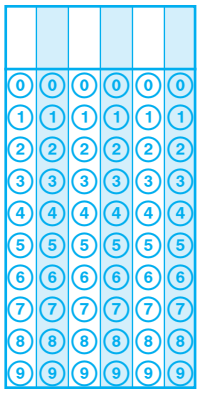
Shape	**Is a Quadrilateral**	**Has More Than 5 Sides**
rectangle	☐	☐
hexagon	☐	☐
square	☐	☐

4. A figure is made up of squares.



What is the area, in square centimeters, of the figure?

Enter your answer in the box.



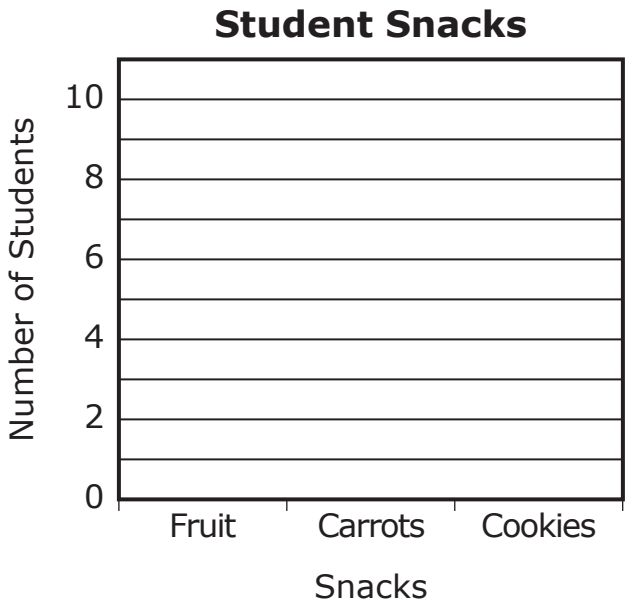
5. After practice, 16 students had a snack. The table shows how many students chose each snack. The number of students who chose cookies is missing.

Student Snacks

Snacks	Number of Students
fruit	3
carrots	7
cookies	**?**

Find how many students chose cookies. Then, use the table to create a graph.

Complete the bar graph by graphing each bar and shading to the correct height.



6. Part A

A student measures the mass of 2 jars of sand. The total mass of the 2 jars of sand is 963 grams.

Which two jars of sand have a total mass of 963 grams?

Circle the **two** correct jars.

Part B

The student also has jars of rocks that have a total mass of 300 grams.

Which group of jars could the student have?

Select the **two** answers that are correct.

Ⓐ 7 jars, each with a mass of 40 grams

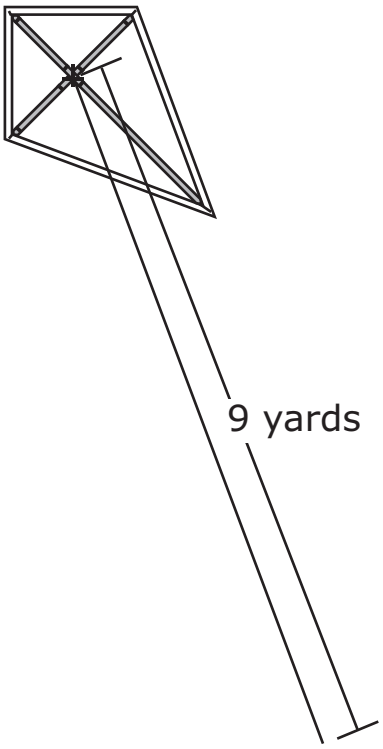
Ⓑ 6 jars, each with a mass of 50 grams

Ⓒ 5 jars, each with a mass of 60 grams

Ⓓ 4 jars, each with a mass of 80 grams

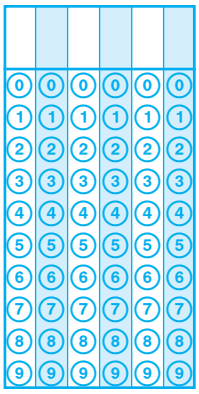
Ⓔ 3 jars, each with a mass of 10 grams

7. A student wants to make some kites. Each kite needs 9 yards of string.



How many yards of string will the student need to make 4 kites?

Enter your answer in the box.



Use the information provided to answer Part A and Part B for question 8.

A person is buying clothing for her family. She is buying 3 hats, 1 scarf, and 4 belts. The table shows the price of each piece of clothing.

Price of Clothing

Clothing	Price
Hat	$8
Scarf	$10
Belt	$6

8. Part A

Write an equation to show the cost of buying 3 hats.

Write the correct numbers from the list provided in the blank boxes to show the cost of buying 3 hats. Each number may be used once, more than once, or not at all.

5	6	8	10	11	18	24	60	80

3 × [ ] = [ ]

Part B

The person has a total of $100 to spend on the hats, scarves, and belts.

- Find the total cost of 7 hats, 1 scarf, and 4 belts.
- Explain or show how to find how much money the person will have left over.
- What is the total amount of money left over?

Enter your answers and your work or explanation in the space provided.

9. Which number makes the equation true?

$$\square \div 9 = 6$$

Ⓐ 36

Ⓑ 45

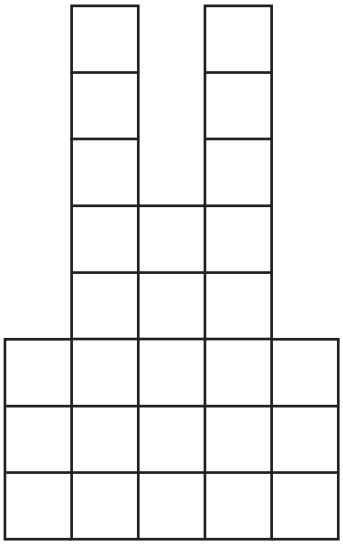
Ⓒ 54

Ⓓ 63

TURN THE PAGE AND CONTINUE WORKING

10. A preschool teacher uses square carpet tiles for a play area in the classroom. The figure shows how the carpet tiles are placed on the floor.

Play Area



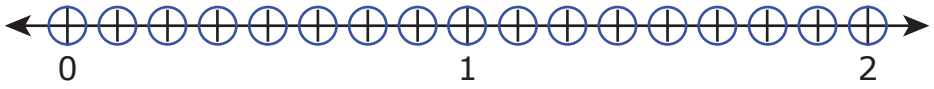
KEY
Area of ☐ = 1 square foot.

- What is the total area of the figure?
- Show or explain how you found the total area of the figure.
- Write a multiplication equation for a figure that has the same area.

Enter your answers and your work or explanation in the space provided.

11. Plot $\frac{7}{8}$ on the number line.

Fill in a circle on the number line to plot the point.



12. **Part A**

A store has a parking lot. There are 6 rows of parking spaces in the parking lot. There are 8 parking spaces in each row.

There are 19 cars parked in the parking lot.

How many parking spaces in the parking lot are empty?

Ⓐ 29

Ⓑ 35

Ⓒ 48

Ⓓ 67

Part B

Another store has a parking lot with 9 rows of parking spaces. Each row has the same number of parking spaces. There are a total of 90 parking spaces. There are only 2 cars parked in each row.

How many parking spaces in each row are empty?

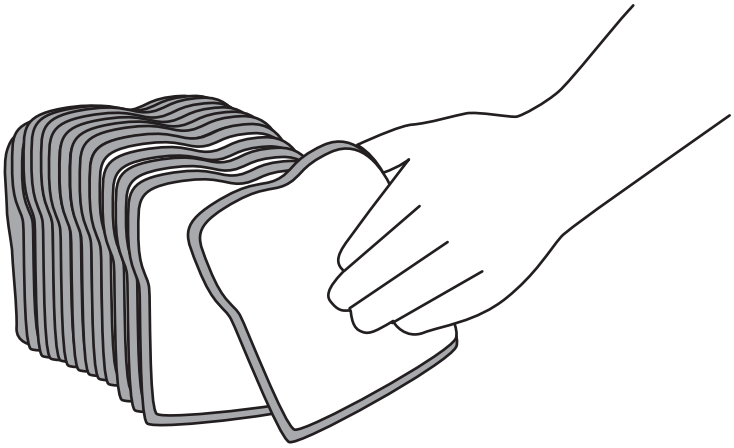
Ⓐ 7

Ⓑ 8

Ⓒ 9

Ⓓ 10

13. A package of bread has a mass of 623 grams. One slice of bread is removed from the package. The slice of bread has a mass of 55 grams.



What is the mass, in grams, of the package of bread after the slice of bread is removed?

Enter your answer in the box.

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

This is the end of Item Set 1.

ITEM SET 2

1. What is the value of 6×80?

Ⓐ 360

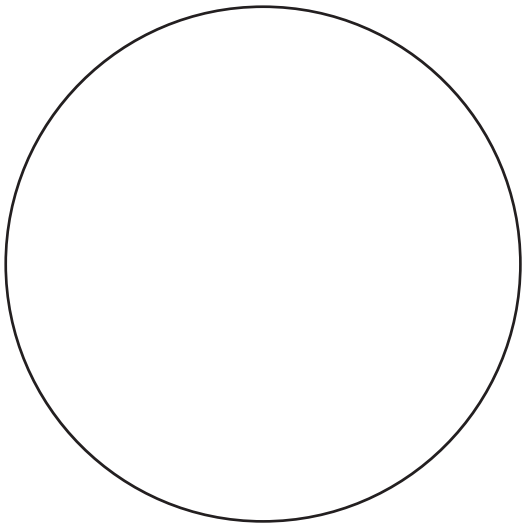
Ⓑ 420

Ⓒ 480

Ⓓ 490

2. Create a model of a fraction to show $\frac{1}{4}$ shaded.

Divide the circle into the correct number of equal parts. Then show your answer by shading the part or parts.



3. There are 8 people. They each have 4 oranges.

Which expression shows how many oranges the people have altogether?

Ⓐ $8 + 4$

Ⓑ $8 - 4$

Ⓒ 8×4

Ⓓ $8 \div 4$

Use the information provided to answer Part A through Part C for question 4.

A teacher and her class collected books.

- Group A collected 334 books.
- Group B collected 407 books.
- The teacher collected 26 books.

4. Part A

Which comparison correctly compares the number of books collected?

Select the **three** correct comparisons.

Ⓐ 407 < 334

Ⓑ 26 > 407

Ⓒ 26 < 334

Ⓓ 407 > 334

Ⓔ 26 < 407

Ⓕ 26 > 334

Part B

Identify the correct number of 100s, 10s, and 1s to show the total amount of books Group A collected.

Write the correct number of 100s, 10s, and 1s next to the picture for each value.

_____

10 books

_____

1 book

_____

Part C

A bookstore gave the class an additional 32 books. The teacher placed all the books together.

- Write an equation or equations that could be used to find the total number of books, including the books from the bookstore.
- Include the total number of books.
- Write the total number of books collected in expanded form.
- Explain or show how many groups of 100s, 10s, and 1s of books the teacher would have after placing all the books together.

Enter your equation or equations, your answers, and your work or explanation in the space provided.

5. Student A eats $\frac{3}{8}$ of a candy bar. Student B eats $\frac{3}{6}$ of the same-sized candy bar.

Complete the sentence to compare the fraction of the candy bar each student eats.

Circle the answer options to correctly complete the sentence.

Student A eats _____ fraction of a candy bar

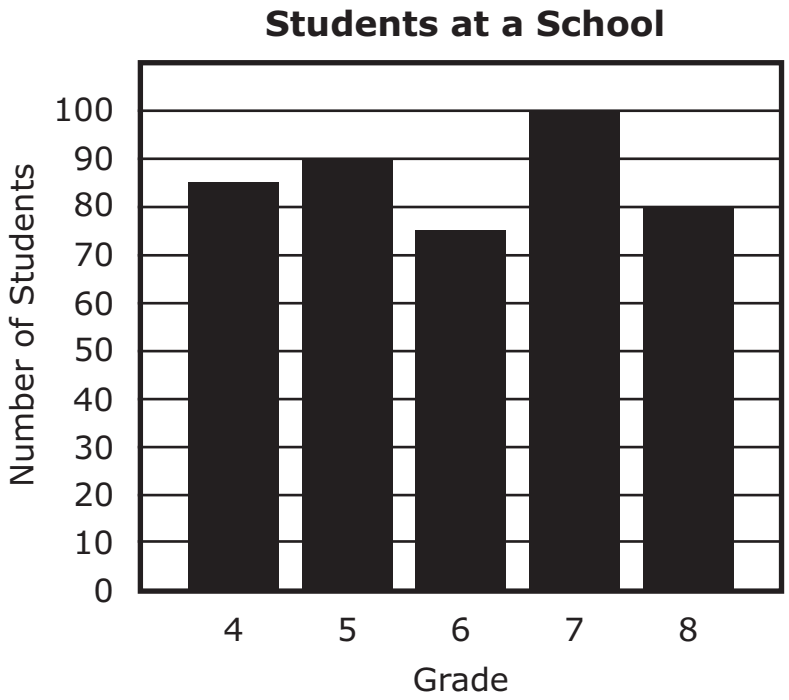
a smaller
a larger
an equal

than Student B, because $\frac{3}{6}$ ____ $\frac{3}{8}$.

>
<
=

Use the information provided to answer Part A and Part B for question 6.

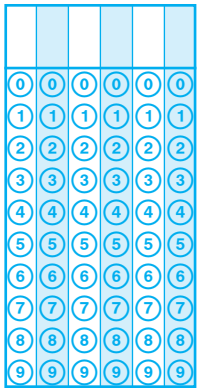
The bar graph shows the number of students in each grade at a school.



6. Part A

How many more students are in grade 7 than are in grade 4?

Enter your answer in the box.



Part B

How many more students are in grade 5 and grade 8 together than are in grade 6?

Ⓐ 115

Ⓑ 105

Ⓒ 95

Ⓓ 85

7. A total of 80 books were sent to 8 schools. Each school gets the same number of books.

How many books does each school get?

Ⓐ 8

Ⓑ 9

Ⓒ 10

Ⓓ 11

8. There are 309 third graders at a school.

There are 412 fourth graders at the same school.

A student wants to find how many more fourth graders there are than third graders.

The student says that there are 117 more fourth graders than third graders. The student's reasoning is that subtraction gives $9 - 2 = 7$ in the ones place, $1 - 0 = 1$ in the tens place, and $4 - 3 = 1$ in the hundreds place.

- Explain the mistake in the student's reasoning.
- Explain how to correct the mistake. Include the answer in your explanation.
- Find the total number of third and fourth graders. Show your work.

Enter your explanations, your answers, and your work in the space provided.

9. Multiply or divide to complete each equation.

Enter your answers in the spaces provided. Enter **only** your answers.

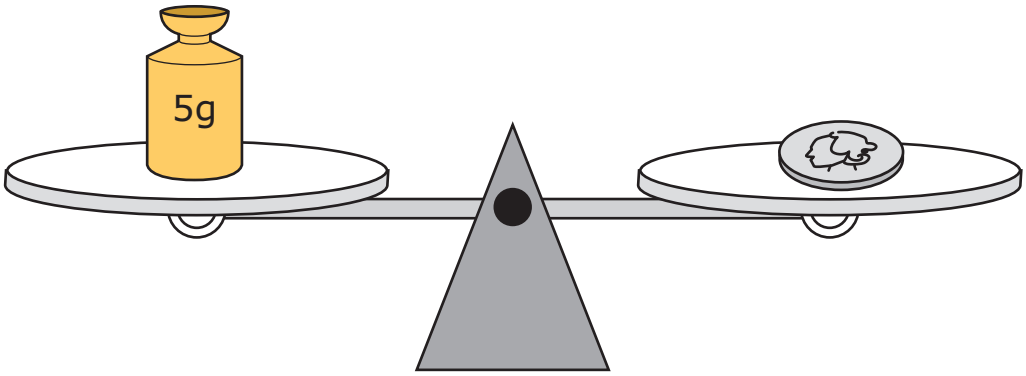
$3 \times 4 =$ _____

$12 \div 2 =$ _____

$18 \div 2 =$ _____

$3 \times 8 =$ _____

10. One side of a scale holds grams, and the other side of the scale holds a coin. The scale is balanced.



What is the mass, in grams, of 9 coins?

Enter your answer in the box.

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

This is the end of Item Set 2.

ITEM SET 3

1. Find the missing length, width, or perimeter for each rectangle in the table.

Write a number from the list in each blank.

2	5	7	12	13	14

	Length (inches)	**Width (inches)**	**Perimeter (inches)**
Rectangle A	4	3	
Rectangle B		8	20
Rectangle C	3		16

TURN THE PAGE AND CONTINUE WORKING

Use the information provided to answer Part A and Part B for question 2.

A teacher is making a rectangular reading space for students in a classroom.

2. Part A

There are three different ways the teacher can make the reading space. The table is missing some of the information needed.

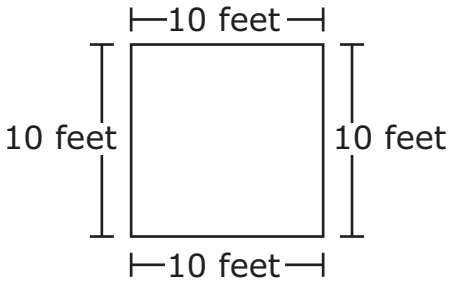
Write a number from the list shown into each spot on the table. Each number may be used once, more than once, or not at all.

4	7	8	13	27	42

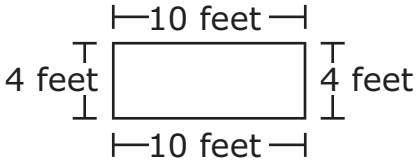
	Length (feet)	**Width (feet)**	**Area (square feet)**
Reading Space 1		9	36
Reading Space 2	7	6	
Reading Space 3	8		64

Part B

The students make two different drawings of a reading space. The students think each reading space has an area of 40 square feet.



Drawing 1



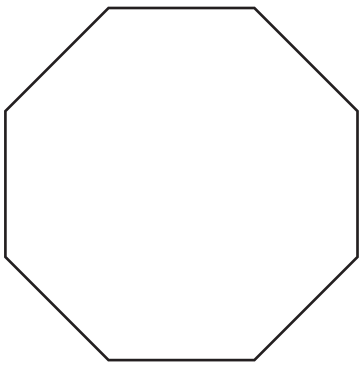
Drawing 2

- Explain whether each drawing shows an area of 40 square feet.
- Explain a different way the reading space can have an area of 40 square feet.

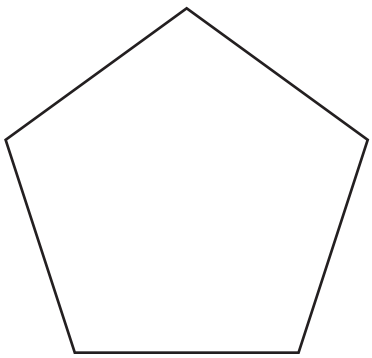
Enter your explanations in the space provided.

3. Which shape is a quadrilateral?

Ⓐ



Ⓑ



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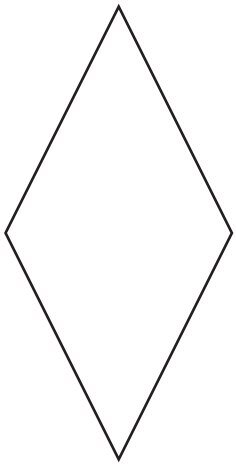
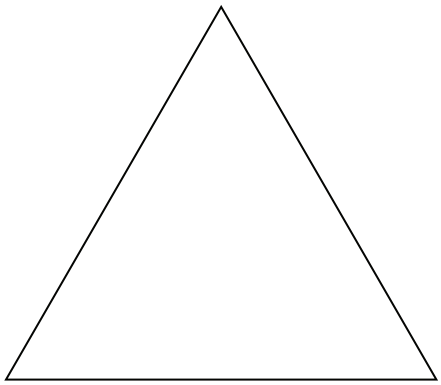


Ⓓ

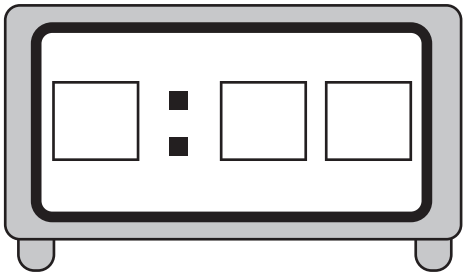


4. A student practices the piano for 35 minutes. He starts practice at 6:15.

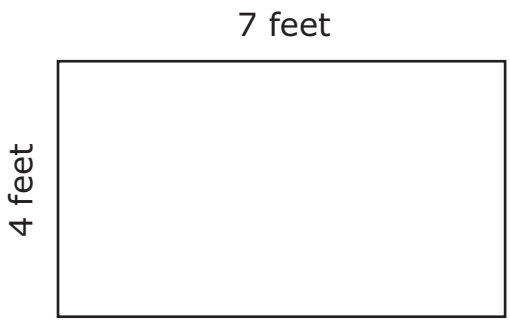
What time will he end practice?

Write a number from the list in each blank to show the correct end time on the clock. Each number may be used once, more than once, or not at all.

0	**1**	**2**	**3**	**4**
5	**6**	**7**	**8**	**9**

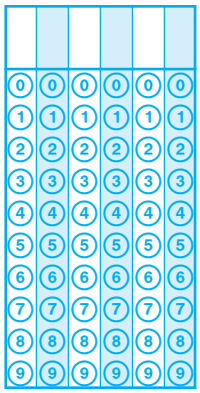


5. The diagram shows a rectangular tabletop.



What is the area, in square feet, of the tabletop?

Enter your answer in the box.



6. What could the expression 27 ÷ 3 stand for?

Ⓐ There are 3 cows that leave a group of 27 cows.

Ⓑ There are 3 cows that join a group of 27 cows.

Ⓒ There are 27 groups with 3 cows each.

Ⓓ There are 27 cows in 3 equal groups.

Use the information provided to answer Part A and Part B for question 7.

A worker puts together baskets of fruit. He has a total of 63 pieces of fruit. He places 7 pieces of fruit in each basket.

7. Part A

There are 3 oranges in each basket. How many oranges are there in total?

Enter your answer in the box.

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Part B

The worker sells 2 baskets of fruit. How many pieces of fruit does the worker have left in the remaining baskets?

Enter your answer in the box.

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

8. What is the value of 537 – 368?

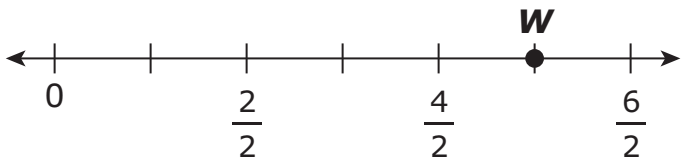
Ⓐ 169

Ⓑ 179

Ⓒ 249

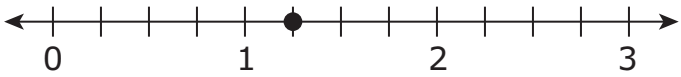
Ⓓ 269

9. Point *W* is shown at $\frac{5}{2}$ on the number line.

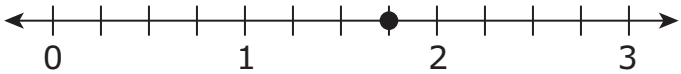


Which number line shows a fraction equivalent to $\frac{5}{2}$?

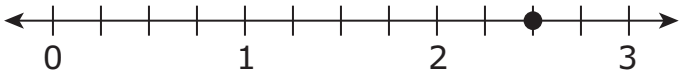
Ⓐ



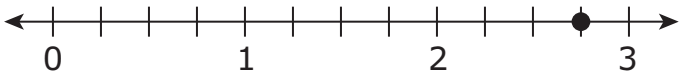
Ⓑ



Ⓒ



Ⓓ



This is the end of Item Set 3.

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