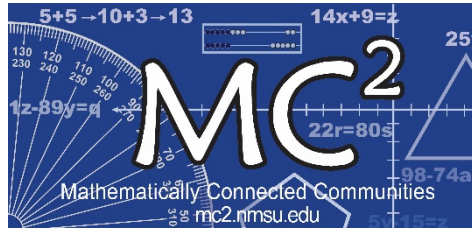


Mathematically Connected Communities



PARCC Practice Test Items Grade 4 Mathematics

Excerpted 10/2016 from
PARCC Paper-Based and Computer-Based
Practice Tests

<https://parcc.pearson.com/practice-tests/math/>

Mathematical Practice Questions for MC² Thinking Protocol

Use the MC² Thinking Protocol and follow the process below in working with the PARCC practice test items found in this packet:

1. Choose items from this packet that relate to math concepts studied in the current or previous curriculum units during your math instruction. Each item may be used as a practice item worksheet.
2. Choose a set of **Thinking/Writing Prompts** below based on the math practice the class is working to develop.
3. Add the prompts to the practice item worksheet or display the prompts for the students to respond to.
4. Continue using the same set of prompts for an extended period of time so children develop competence and confidence in describing their mathematical thinking related to the math practice.

The questions below were intentionally not included on each MC² PARCC practice test item worksheet in this packet. These are intended to help students move beyond “answer getting” to fully making sense of test item questions and their own mathematical thinking.

Thinking/Writing Prompts to Promote Mathematical Practices

Math Practice 1: **Make sense of problems and persevere in solving them.**

1. What do you know about the problem?
2. What questions do you have?
3. Explain your reasoning or thinking in solving the problem.

Math Practice 3: **Construct viable arguments and critique the reasoning of others.**

1. What are the assumptions, definitions, and previous knowledge to help in thinking about this problem?
2. What are some possible conjectures that you have about the problem?
3. Explain your mathematical argument so that somebody else can make sense of your thinking.

Math Practice 4: **Model with mathematics.**

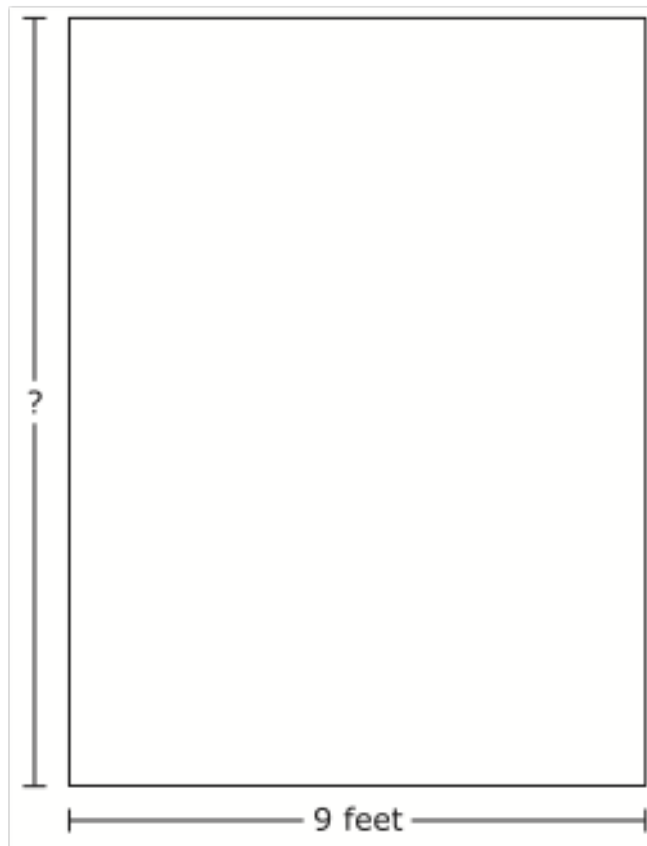
1. What are the important quantities in the problem that are needed to solve it?
2. What mathematical operation(s) or representation(s) will you use to solve the problem?
3. Explain how you know your answer makes sense in the context of the situation.

Math Practice 6: **Attend to precision.**

1. What are the important units in the problem? (What are we measuring or counting?)
2. What relationship between the units/quantities do you need to know in order to solve the problem?
3. Use appropriate and precise mathematical language, units, labels and computations to clearly describe your mathematical reasoning.

4th Grade PARCC Unit 1 Practice Test Item #1 (Non-Calculator): Standard 4.MD.3

1. The area of the rectangular sandbox at Dave's school is 108 square feet. The sandbox has a width of 9 feet as shown in the diagram.



What is the length, in feet, of the sandbox?

Enter your answer in the box.

4th Grade PARCC Unit 1 Practice Test Item #2 (Non-Calculator): Standard 4.NF.Int.2

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

Jordan places two boards end to end to make one shelf. The first board is

$\frac{47}{100}$ meter long. The second board is $\frac{5}{10}$ meter long.

2. Part A

What fraction is equivalent to $\frac{5}{10}$ and has a denominator of 100?

- A. $\frac{5}{100}$
- B. $\frac{50}{100}$
- C. $\frac{105}{100}$
- D. $\frac{150}{100}$

Part B

What is the total length, in meters, of the two boards?

- A. $9\frac{7}{10}$
- B. $5\frac{2}{10}$
- C. $\frac{97}{100}$
- D. $\frac{52}{100}$

4th Grade PARCC Unit 1 Practice Test Item #3 (Non-Calculator): Standard 4.NBT.5-1

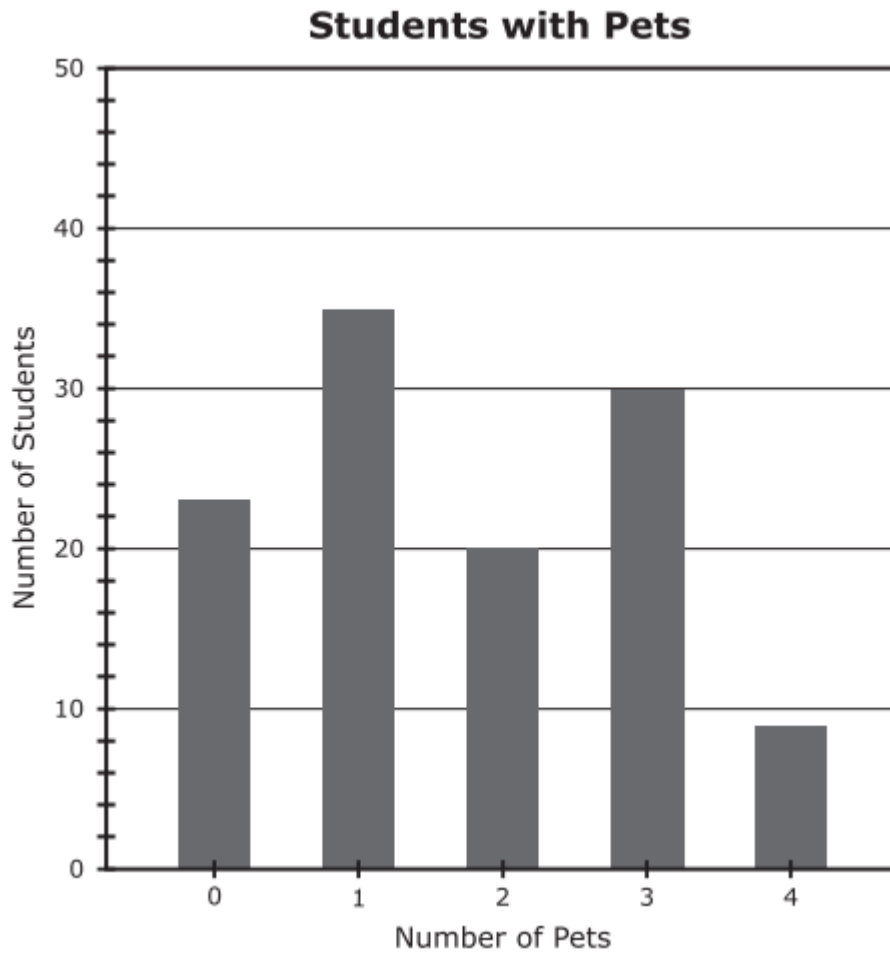
3. Enter your answer in the box.

$$3,649 \times 6 =$$

4th Grade PARCC Unit 1 Practice Test Item #4 (Non-Calculator): Standards 4.D.2, 3.MD.3

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

Ms. Sloan asked 117 fourth-grade students the question, "How many pets do you have?" She displayed the data she collected in the bar graph shown.



4. Part A

How many of the students that responded have 2 pets?

Enter your answer in the box.

4th Grade PARCC Unit 1 Practice Test Item #4 (Non-Calculator): Standards 4.D.2, 3.MD.3

(continued)

Part B

How many more students have 1 pet than students who have 3 pets? Explain your answer.

Enter your answer and explanation in the space provided.

Part C

Find the total number of pets the fourth-grade students have.

- Explain how you used the bar graph to solve the problem.
- Show your work using equations.

Enter your explanation, your work, and the total number of pets in the space provided.

4th Grade PARCC Unit 1 Practice Test Item #5 (Non-Calculator): Standard 4.OA.4-1

5. Select the **three** choices that are factor pairs for the number 28.
- A. 1 and 28
 - B. 2 and 14
 - C. 3 and 9
 - D. 4 and 7
 - E. 6 and 5
 - F. 8 and 3

4th Grade PARCC Unit 1 Practice Test Item #6 (Non-Calculator): Standard 4.NF.2-1

6. Which pairs of fractions show a correct comparison?

Select the **two** correct answers.

A. $\frac{2}{5} = \frac{40}{100}$

B. $\frac{2}{5} > \frac{6}{9}$

C. $\frac{2}{5} > \frac{2}{3}$

D. $\frac{3}{5} < \frac{8}{12}$

E. $\frac{3}{5} > \frac{2}{3}$

F. $\frac{3}{5} = \frac{98}{100}$

4th Grade PARCC Unit 1 Practice Test Item #7 (Non-Calculator): Standard 4.NBT.2

7. Which numbers make the comparison true?

$$27,768 < \square$$

Select the **two** correct answers.

- A. 27,759
- B. 28,744
- C. 26,773
- D. 27,568
- E. 27,836

4th Grade PARCC Unit 1 Practice Test Item #8 (Non-Calculator): Standards 4.C.5-5, 4.NF.7

8. Part A

Alex ran 0.5 mile.

What number should replace the ? to make a fraction equivalent to 0.5?

$$\frac{?}{10}$$

Enter your answer in the box.

Part B

Christy ran $\frac{4}{10}$ mile on Monday and $\frac{7}{100}$ mile on Tuesday. She said that she ran a total of $\frac{47}{100}$ mile. Christy told Alex that she ran a greater distance than he ran, because 47 is more than 5.

- Identify the incorrect reasoning in Christy's statement.
- Explain how Christy can correct her reasoning.
- Use $>$, $<$, or $=$ to give a correct comparison between the distances that Alex and Christy ran.

Enter your explanation and the correct comparison in the space provided.

4th Grade PARCC Unit 1 Practice Test Item #9 (Non-Calculator): Standard 4.NBT.Int.1

9. Enter your answer in the box.

$$3,950 + 405 =$$

4th Grade PARCC Unit 1 Practice Test Item #10 (Non-Calculator): Standard 4.NF.3d

Use the information provided to answer Part A and Part B for question 10.

Each student in a class chose one sport to play. The table shows the fractions of all students who chose each sport.

Sport	Fraction of All Students
soccer	$\frac{3}{10}$
football	$\frac{2}{10}$
hockey	$\frac{1}{10}$
basketball	$\frac{4}{10}$

10. Part A

Which equation can be used to find s , the fraction of all students that chose to play either soccer or basketball?

A. $\frac{3}{10} + \frac{4}{10} = s$

B. $\frac{2}{10} - \frac{1}{10} = s$

C. $\frac{4}{10} + \frac{2}{10} = s$

D. $\frac{4}{10} - \frac{3}{10} = s$

4th Grade PARCC Unit 1 Practice Test Item #10 (Non-Calculator): Standard 4.NF.3d
(continued)

Part B

What fraction of all the students chose to play either soccer or basketball?

- A. $\frac{1}{10}$
- B. $\frac{3}{10}$
- C. $\frac{6}{10}$
- D. $\frac{7}{10}$

4th Grade PARCC Unit 1 Practice Test Item #11 (Non-Calculator): Standard 4.NF.4b-1

11. Which expression is equivalent to $6 \times \frac{2}{3}$?

A. $12 \times \frac{1}{2}$

B. $12 \times \frac{1}{3}$

C. $6 \times \frac{1}{3}$

D. $3 \times \frac{2}{3}$

12. Enter your answer in the box.

$$522 \div 9 =$$

4th Grade PARCC Unit 2 Practice Test Item #13 (Non-Calculator): Standard 4.NBT.1

- 13.** The value of the digit 4 in the number 42,780 is 10 times the value of the digit 4 in which number?
- A.** 34,651
 - B.** 146,703
 - C.** 426,135
 - D.** 510,400

4th Grade PARCC Unit 2 Practice Test Item #14 (Non-Calculator): Standards 4.D.1, 4.OA.2

- 14.** The table shows the number of yards Ed ran in each of the first three football games of the season.

Game	Yards
1	157
2	309
3	172

After the first three games of the season, Rico had exactly 3 times the total number of running yards that Ed had.

How many **more** total running yards did Rico have than Ed after the first three games of the season? Show your work using equations.

Enter your answer and your work in the space provided.

4th Grade PARCC Unit 2 Practice Test Item #15 (Non-Calculator): Standard 4.NBT.4-2

15. Enter your answer in the box.

$$5,314 - 4,983 =$$

4th Grade PARCC Unit 2 Practice Test Item #16 (Non-Calculator): Standard 4.NF.4c

16. Ryan makes 6 backpacks. He uses $\frac{3}{4}$ yard of cloth to make each backpack. What is the total amount of cloth, in yards, Ryan uses to make all 6 backpacks?

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

B. $2\frac{1}{4}$

C. $4\frac{1}{2}$

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

4th Grade PARCC Unit 2 Practice Test Item #17 (Non-Calculator): Standard 4.NF.A.Int.1

Use the information provided to answer Part A and Part B for question 17.

Rachana has a set of 10 mugs. The set is made up of three different kinds of mugs.

- $\frac{1}{2}$ of the mugs have pictures on them.
- $\frac{2}{5}$ of the mugs have words on them.
- $\frac{1}{10}$ of the mugs have flowers on them.

17. Part A

Select the **three** number sentences that correctly compare two of these fractions.

A. $\frac{1}{2} < \frac{2}{5}$

B. $\frac{1}{2} > \frac{2}{5}$

C. $\frac{1}{2} < \frac{1}{10}$

D. $\frac{1}{2} > \frac{1}{10}$

E. $\frac{1}{10} < \frac{2}{5}$

F. $\frac{1}{10} > \frac{2}{5}$

4th Grade PARCC Unit 2 Practice Test Item #17 (Non-Calculator): Standard 4.NF.A.Int.1
(continued)

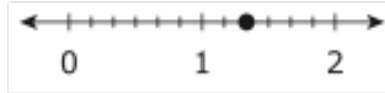
Part B

Which fraction is equal to $\frac{2}{5}$?

- A.** $\frac{1}{10}$
- B.** $\frac{2}{10}$
- C.** $\frac{4}{10}$
- D.** $\frac{5}{10}$

4th Grade PARCC Unit 2 Practice Test Item #18 (Non-Calculator): Standard 4.NF.3b-1

18. The point on the number line shows the value of the sum of two fractions.



Which expression has the same sum?

A. $\frac{4}{3} + \frac{4}{3}$

B. $\frac{6}{4} + \frac{2}{4}$

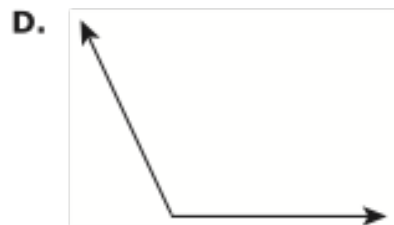
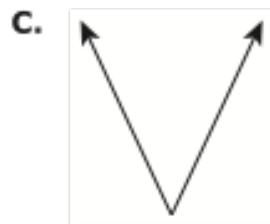
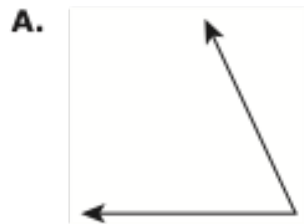
C. $\frac{5}{6} + \frac{3}{6}$

D. $\frac{2}{12} + \frac{6}{12}$

4th Grade PARCC Unit 2 Practice Test Item #19 (Non-Calculator): Standard 4.MD.6

19. Which angle has a measure of 65° ?

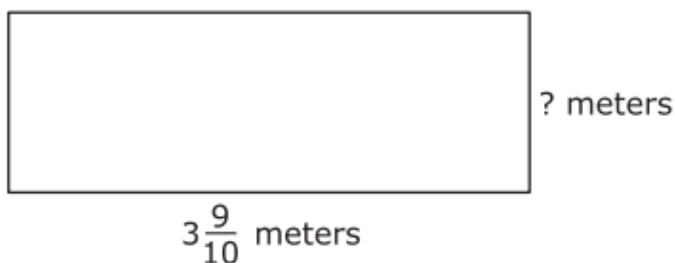
You can use a protractor to help you find the answer.



4th Grade PARCC Unit 2 Practice Test Item #20 (Non-Calculator): Standard 4.Int.6

Use the information provided to answer Part A and Part B for question 20.

The model shows a hallway in Clark's house.



20. Part A

The perimeter of the hallway is $10\frac{4}{10}$ meters.

What is the width, in meters, of the hallway?

- A. $1\frac{3}{10}$
- B. $2\frac{6}{10}$
- C. $6\frac{5}{10}$
- D. $7\frac{5}{10}$

4th Grade PARCC Unit 2 Practice Test Item #20 (Non-Calculator): Standard 4.Int.6
(continued)

Part B

Clark's family adds a closet that shortens the length of the hallway by $\frac{6}{10}$ meter.

What is the new perimeter, in meters, of the hallway?

- A. $3\frac{3}{10}$
- B. $6\frac{6}{10}$
- C. $9\frac{2}{10}$
- D. $9\frac{8}{10}$

4th Grade PARCC Unit 3 Practice Test Item #21 (Non-Calculator): Standard 4.NF.7

21. Which **three** comparisons are correct?

- A.** 0.4 meter > 0.04 meter
- B.** 0.04 meter > 0.3 meter
- C.** 0.3 meter < 0.5 meter
- D.** 0.5 meter > 0.65 meter
- E.** 0.65 meter > 0.61 meter
- F.** 0.65 meter < 0.04 meter

4th Grade PARCC Unit 3 Practice Test Item #22 (Non-Calculator): Standard 4.OA.2

- 22.** A basketball team scored a total of 747 points for the season. This was 9 times the number of points scored in the first game. How many points were scored during the first game?
- A.** 73
 - B.** 75
 - C.** 82
 - D.** 83

Use the information provided to answer Part A and Part B for question 23.

Camille wants to make fruit drinks. The directions to make one drink include mixing $\frac{4}{8}$ cup of yogurt and 1 cup of ice with the amounts of each fruit shown.

- $\frac{5}{8}$ cup of banana slices
- $\frac{2}{8}$ cup of blueberries

23. Part A

Camille wants to make 6 drinks for her friends. How many total cups of blueberries and banana slices will she use to make the 6 drinks?

- A. $\frac{7}{8}$
- B. $\frac{12}{8}$
- C. $\frac{30}{8}$
- D. $\frac{42}{8}$

Part B

Next Camille will add the yogurt and ice. How many total cups of yogurt and ice will she use to make the 6 drinks? Show your work or explain your answer.

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

4th Grade PARCC Unit 3 Practice Test Item #24 (Non-Calculator): Standard 4.OA.3-2

Use the information provided to answer Part A and Part B for question 24.

The number of science fair projects entered for each grade in a city-wide science fair is shown.

Grade	Number of Science Fair Projects
3	462
4	759
5	891

24. Part A

The science fair projects are set up on tables. There are 99 long tables used. Each long table holds 7 projects. The rest of the projects are set up on short tables. Each short table can hold 4 projects. What is the **fewest** number of short tables that will be needed for the rest of the projects?

- A. 202
- B. 203
- C. 354
- D. 355

Part B

The science fair judges will be science teachers and volunteers. Each judge will only have time to view 5 science fair projects. There are 133 science teachers. What is the **fewest** number of volunteers needed to have enough judges for all of the projects?

- A. 290
- B. 396
- C. 422
- D. 423

4th Grade PARCC Unit 3 Practice Test Item #25 (Non-Calculator): Standard 4.OA.1-2

25. Which **two** equations represent the statement "48 is 6 times as many as 8"?

Select the **two** correct answers.

A. $48 = 6 + 8$

B. $48 = 6 \times 8$

C. $48 = 6 \times 6$

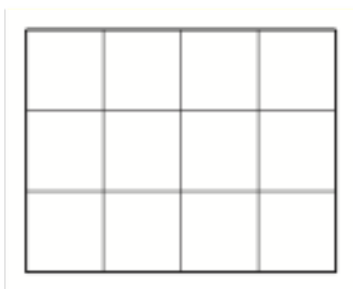
D. $48 = 8 + 6$

E. $48 = 8 \times 6$

4th Grade PARCC Unit 3 Practice Test Item #26 (Non-Calculator): Standards 4.C.4-1, 4.NF.1

Use the information provided to answer Part A and Part B for question 26.

Martin cut a pan of corn bread into equal pieces as shown in the model.



26. Part A

Martin gave $\frac{1}{3}$ of the corn bread to his neighbor.

Explain how you can use the model to show $\frac{1}{3}$. Then write a fraction that is equivalent to $\frac{1}{3}$.

Enter your explanation and your answer in the space provided.

Part B

Martin gave $\frac{6}{12}$ of the corn bread to his teacher.

Write a comparison using $<$, $>$, or $=$ to compare the fractions $\frac{1}{3}$ and $\frac{6}{12}$.

Explain how the model can be used to compare these fractions.

Enter your comparison and your explanation in the space provided.

4th Grade PARCC Unit 3 Practice Test Item #27 (Non-Calculator): Standard 4.OA.4-3

27. Ten numbers are shown in the box.

1	2	4	8	20
24	36	58	64	80

Which list includes all the multiples of 8 that are shown in the box?

- A.** 8, 58, 80
- B.** 1, 2, 4, 8
- C.** 8, 24, 64, 80
- D.** 1, 8, 24, 64, 80

4th Grade PARCC Unit 4 Practice Test Item #28 (Non-Calculator): Standard 4.NBT.4-1

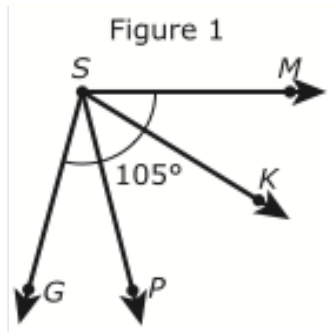
28. Enter your answer in the box.

$$7,564 + 8,239 =$$

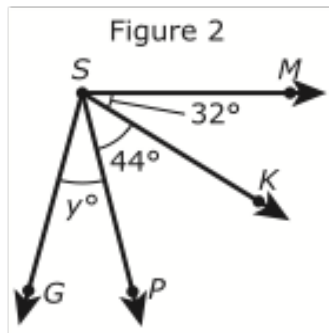
4th Grade PARCC Unit 4 Practice Test Item #29 (Non-Calculator): Standard 4.MD.7

Use the information provided to answer Part A and Part B for question 29.

Two figures are shown. In Figure 1, the measure of angle MSG is 105° .



The measures of angle MSK , angle KSP , and angle PSG are shown in Figure 2. The measure of angle MSG is still 105° .



29. Part A

Which equation can be used to find the value of y ?

- A. $y - 44 - 32 = 105$
- B. $y \times 44 \times 32 = 105$
- C. $y + 44 + 32 = 105$
- D. $y + 44 + 32 = 105$

Part B

What is the value of y ?

4th Grade PARCC Unit 4 Practice Test Item #30 (Non-Calculator): Standard 4.OA.3-2

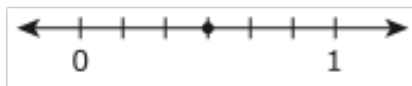
- 30.** Hayley has 272 beads. She buys 38 more beads. She will use 89 beads to make bracelets and the rest to make necklaces. She will use 9 beads for each necklace.

What is the **greatest** number of necklaces Hayley can make?

Enter your answer in the box.

31. Part A

Shaun plotted a point on the number line by drawing 5 equally spaced marks between 0 and 1 and placing a point on the third mark. He claims that the point represents the fraction $\frac{3}{5}$ because each mark represents $\frac{1}{5}$, so the third mark represents $\frac{3}{5}$.



- Explain why Shaun's reasoning is incorrect.
- Explain how you can use the number line to determine the fraction that Shaun's point represents.
- Determine the fraction that Shaun's point represents.

Enter your explanations and your answer in the space provided.

Part B

Shaun wants to write a fraction that is equivalent to the fraction $\frac{2}{3}$.

Describe how Shaun can find a fraction that is equivalent to $\frac{2}{3}$.

Enter your description in the space provided.

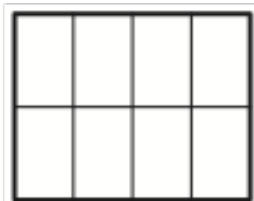
4th Grade PARCC Unit 4 Practice Test Item #32 (Non-Calculator): Standard 4.MD.5

32. Which statement about angles is true?

- A.** An angle is formed by two rays that do not have the same endpoint.
- B.** An angle that turns through $\frac{1}{360}$ of a circle has a measure of 360 degrees.
- C.** An angle that turns through five 1-degree angles has a measure of 5 degrees.
- D.** An angle measure is equal to the total length of the two rays that form the angle.

4th Grade PARCC Unit 4 Practice Test Item #33 (Non-Calculator): Standard 4.NF.3a

33. The rectangle is divided into eight equal sections.



Jodi colors 4 sections. Then she colors 3 more sections.

Which **two** of these represent the fraction of the rectangle that Jodi colors in all?

Select the **two** correct answers.

A. $\frac{4}{8} + \frac{3}{8}$

B. $4 + 3$

C. $\frac{8}{4} + \frac{8}{3}$

D. $\frac{1}{8} + 3$

E. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

4th Grade PARCC Unit 4 Practice Test Item #34 (Non-Calculator): Standards 4.C.5-1, 4.OA.3

Use the information provided to answer Part A and Part B for question 34.

Jian's family sells honey from beehives. They collected 3,311 ounces of honey from the beehives this season. They will use the honey to completely fill 4-ounce jars or 6-ounce jars.

Jian's family will sell 4-ounce jars for \$5 each or 6-ounce jars for \$8 each.

Jian says if they use only 4-ounce jars, they could make \$4,140 because $3,311 \div 4 = 827 \text{ R } 3$. That rounds up to 828, and 828 multiplied by \$5 is \$4,140.

34. Part A

Explain the error that Jian made when finding the amount of money his family could make if they use only 4-ounce jars.

Enter your explanation in the space provided.

Part B

Explain how to determine the money Jian's family could make if they use only 6-ounce jars. Include the total amount of money and the total number of 6-ounce jars in your explanation.

Enter your answers and your explanation in the space provided.

4th Grade PARCC Unit 4 Practice Test Item #35 (Non-Calculator): Standard 4.MD.1

- 35.** The length of a desktop is 4 feet. How many inches is the length of the desktop?

Enter your answer in the box.

4th Grade PARCC Unit 4 Practice Test Item #36 (Non-Calculator): Standard 4.Int.2

- 36.** Mr. Kowolski ordered 35 boxes of granola bars. Each box contained 24 granola bars.

What is the total number of granola bars Mr. Kowolski ordered?

Enter your answer in the box.

4th Grade PARCC Unit 4 Practice Test Item #37 (Non-Calculator): Standard 4.NF.Int.1

37. Part A

Sean buys 5 packages of fish. There is $\frac{7}{8}$ pound of fish in each package.

What is the total weight, in pounds, of fish that Sean buys?

- A. $1\frac{2}{8}$
- B. $1\frac{4}{8}$
- C. $3\frac{5}{8}$
- D. $4\frac{3}{8}$

Part B

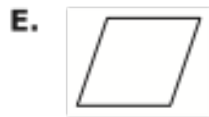
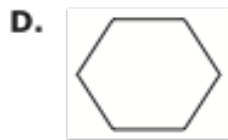
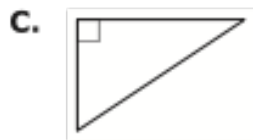
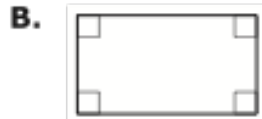
Sean cooks 1 package of the fish. He eats $\frac{3}{8}$ pound of the fish from the package.

What is the total weight, in pounds, of the cooked fish that is left after Sean eats $\frac{3}{8}$ pound?

- A. $\frac{2}{8}$
- B. $\frac{3}{8}$
- C. $\frac{4}{8}$
- D. $\frac{5}{8}$

4th Grade PARCC Unit 4 Practice Test Item #38 (Non-Calculator): Standard 4.G.2

38. Which **three** shapes appear to have at least two parallel sides?



4th Grade PARCC Unit 4 Practice Test Item #39 (Non-Calculator): Standard 4.Int.7

39. The Amazon River is about 6,516 kilometers long.

The Mississippi River is about 3,775 kilometers long.

What is the difference, in kilometers, between these two lengths?

Enter your answer in the box.

4th Grade PARCC COMPUTER-BASED Unit 1 (Non-calculator) Sample Test Item #5:
Standard 4.OA.4-3

Drag and drop each number that is a multiple of 8 into the box.

- 1 2 4 8 20 24 36 58 64 80

Multiples of 8

4th Grade PARCC COMPUTER-BASED Unit 2 (Non-calculator) Sample Test Item #3:
Standards 4.D.1, 4.NF.3d, 4.NF.4c

Henry cut a piece of yarn that was $\frac{11}{6}$ feet long into two pieces. List two different pairs of fractions that could show the lengths, in feet, of the two pieces. Explain how you found your pairs of fractions.

Enter your fraction pairs and your explanation in the space provided.



▼ Math symbols

+	-	×
÷	$\frac{\square}{\square}$	$\frac{\square}{\square}$
()	[]	=
<	>	≠
\$	°	?

4th Grade PARCC COMPUTER-BASED Unit 3 (Non-calculator) Sample Test Item #4:
Standard 4.OA.3-2

Four teachers offer an after-school chess club. The table shows the number of students who joined.

Grade	Number of Students
third	12
fourth	36
fifth	9

Part A

The teachers will divide the total group of students who joined into teams of **no more than** 6 students.

What is the **least** number of teams that will include all of the students?

Enter your answer in the box.

teams

Part B

The chess club started with 18 chess sets. The teachers ordered 3 cases of 15 chess sets. They will divide the total number of chess sets so that each teacher receives an equal number. Then they will give any extra sets to the school library.

What is the **greatest** number of chess sets each of the 4 teachers should get?

Enter your answer in the box.

chess sets

4th Grade PARCC COMPUTER-BASED Unit 4 (Non-calculator) Sample Test Item #9:
Standard 4.Int.4

A team runs a race. There are 4 people on the team, and each person runs the same distance. The team runs a total distance of 5,280 feet.



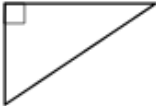


What is the distance, in feet, that each person runs?

Enter your answer in the box.

 feet

4th Grade PARCC COMPUTER-BASED Unit 4 (Non-calculator) Sample Test Item #11:
Standard 4.G.2

For each figure pictured in the table, select the box for any statement that describes the figure. You may select more than one box for each figure.

	Appears to have at least 2 parallel sides	Has at least 2 perpendicular sides
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>