Student Name _____

PARCC

Partnership for Assessment of
Readiness for College and Careers

6–8
Mathematics
Test Booklet

Student Tutorial

Unit 1

Directions:

Today, you will be taking Unit 1 of the 6–8 Student Tutorial. The following tasks are provided as an opportunity for you to practice with the different kinds of questions and response types that will be included in the PARCC Assessments. These items are from the practice tests and sample sets posted at http://parcc.pearson.com/.

Throughout the tutorials you will see hints in boxes at the top of the item pages, to help you answer questions and understand the directions. These hints are not in the actual test, but available only in the tutorials. The directions below will be used during the actual test. During the tutorial, please make sure you understand the directions, and ask your teacher if you have any questions.

Read each question carefully. Some items will ask you to choose one correct answer, while others will ask you to choose more than one answer. Mark your answers by filling in the circles in your test booklet.

Do not make any stray marks in the test booklet. If you need to change an answer in your test booklet, be sure to erase your first answer completely.

Calculator Directions:

In the first section of this unit, you may not use a calculator. You will not be allowed to return to the non-calculator section of the test after you have started the calculator section of the test.

If you do not know the answer to a question, skip it and go on. If you finish the non-calculator section of Unit 1 early, you may review your answers and any questions you may have skipped in the non-calculator section ONLY.

Do NOT go on to the calculator section in Unit 1 until directed to do so.

GO ON ▶

Using multiple-choice and multiple-select items:

Multiple-choice items have four answer choices and allow a single answer choice to be selected.

Multiple-select items have five to seven answer choices and allow for one or more answer choices to be selected.

Mark your answers by filling in the circles in your Test Booklet for the answer you choose.

GO ON ▶

Directions for Completing the Answer Grids

1. Work the item and find an answer.

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

   • Print only one digit or symbol in each box. You may not need all the boxes to enter an answer, but do <u>not</u> leave a blank box in the middle of an answer.

3. Under each box in which you wrote your answer, fill in the bubble that matches the number or symbol you wrote above.

   • Fill in one and ONLY one bubble for each box. Do <u>not</u> fill in a bubble under an unused box.

   • Fill in each bubble by making a solid mark that completely fills the circle.

   • Fractions cannot be entered into an answer grid and will not be scored. Enter fractions as decimals.

4. See below for examples on how to correctly complete an answer grid.

To enter −3, fill in the answer grid as follows

To enter .75, fill in the answer grid as follows

Practice filling in the circles in your test booklet.

GO ON ▶

Unit 1 - Section 1 (Non-Calculator)

The directions below will be used during the actual test. For the tutorial, please make sure you understand the directions, and ask your teacher if you have any questions. At the end of each section, go back and review any items you did not answer in that section.

This unit has two sections: a non-calculator and a calculator section.

You will now take the first section of this unit in which you may not use a calculator. You will not be allowed to return to the non-calculator section of the unit after you have started the calculator section. You will need to finish both sections within the allotted testing time.

Once you finish the non-calculator section, read the directions in your Test Booklet on how to continue.

GO ON ▶

HINT: Multiple-choice items have four answer choices with one correct answer. Completely fill in the bubble in front of the correct answer choice. Only one bubble should be filled.

1. Joanne buys a rug with an area of $\frac{35}{4}$ square meters. The length of the rug is $\frac{7}{2}$ meters.

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

   Ⓐ $\frac{5}{8}$

   Ⓑ $\frac{7}{8}$

   Ⓒ $\frac{5}{2}$

   Ⓓ $\frac{7}{2}$

GO ON ▶

2. This number line shows four points.
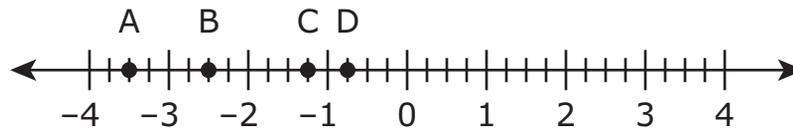
Which point is located at $-\dfrac{3}{4}$?

ⓐ point *A*

ⓑ point *B*

ⓒ point *C*

ⓓ point *D*

GO ON ▶

HINT: Multiple-select items will have five to seven answer options.

Fill in the response circles with one or more answer choices. You must fill in the correct number of circles for the item to be considered complete.

3. Which equations with exponential expressions are true?

Select **all** that apply.

Ⓐ $3^3 = 3 \cdot 3$

Ⓑ $5^2 = 5 \cdot 5$

Ⓒ $5^4 = 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$

Ⓓ $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 = 6^7$

Ⓔ $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 = 7^6$

Ⓕ $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 = 7^7$

GO ON ▶

> **HINT: This item has two parts to it.**
>
> **Part A and Part B are multiple-choice items. Fill in the response circle in your test booklet with one choice.**

VH057416_2:1:1:4

Use the information provided to answer Part A and Part B for question 4.

Line *t* is shown in the coordinate plane.
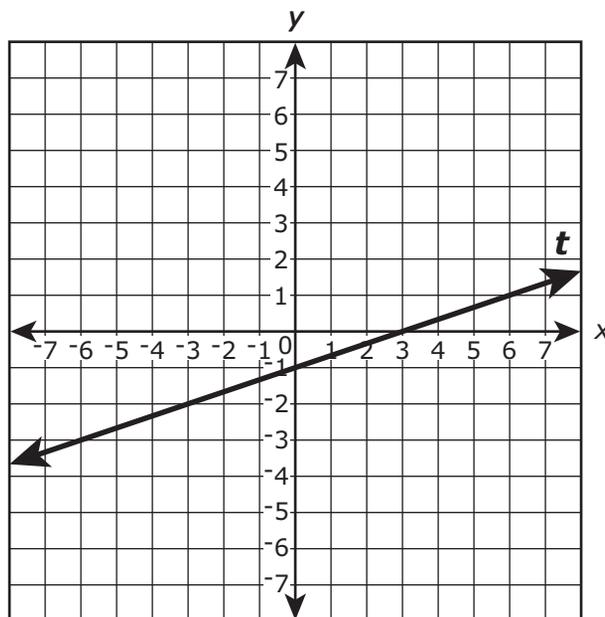
4.   **Part A**

What is the slope of line *t*?

Ⓐ   3

Ⓑ $\dfrac{1}{3}$

Ⓒ $-\dfrac{1}{3}$

Ⓓ   −3

9

GO ON ▶

Part B

What is the *y*-intercept of line *t*?

Ⓐ −1

Ⓑ $-\dfrac{1}{3}$

Ⓒ $\dfrac{1}{3}$

Ⓓ 3

GO ON ▶

HINT: Your answer must be written <u>and</u> bubbled in the answer grid. To fill in a negative integer, fill in the circle with the negative sign in the first column of the answer grid. If a negative sign is not needed, do not fill in the bubble. Fraction bars cannot be entered into answer grids. Enter fractions as decimals. Please refer to page 4 of this tutorial, if necessary.

VH045950_1.04

5. Enter your answer in the box.

$33.8 \div 32.5 =$

STOP

HINT: During the actual test, you will see a stop sign at the end of each section. When you reach the stop sign, review the directions below it, and if there is time, review your answers from this section only. For the tutorial, ask your teacher if you have any questions about the directions below. You may go on to the next section.

You have come to the end of the non-calculator section in Unit 1 of the test.

- **If you have time, review your answers in the non-calculator section ONLY. You will not be allowed to return to the non-calculator section once you have received your calculator.**
- **Then, raise your hand to receive your calculator before going on to the calculator section.**

Unit 1 - Section 2 (Calculator)

The directions below will be used during the actual test. For the tutorial, please make sure you understand the directions, and ask your teacher if you have any questions. At the end of each section, go back and review any items you did not answer in that section only.

Once you have received your calculator, continue with the calculator section.

GO ON ▶

> **HINT: Multiple-select items have five to seven answer choices.**
>
> **On multiple-select items the directions indicate that multiple responses are required by the word 'all' in the last statement, "Select all that apply." Fill in the response circles in your test booklet.**

6. Which expressions are equivalent to $-3 - (7.5 + 4)$? Select **all** that apply.

Ⓐ $(7.5 + 4) - 3$

Ⓑ $-(7.5 + 4) - 3$

Ⓒ $-(7.5 + 4) + 3$

Ⓓ $-3 - (4 + 7.5)$

Ⓔ $-(3 - 7.5) + 4$

Ⓕ $-3 + (-7.5 - 4)$

Ⓖ $-3 + (-7.5 + 4)$

GO ON ▶

HINT: Your answer must be written and bubbled in the answer grid. Read the directions carefully. This item is asking for your answer as a decimal.

When completing an answer grid, do not leave empty spaces between integers. Fill in the circles from left to right, as necessary.

VH076737_0.625

7. This is an input-output table with x as the input and y as the output. This table shows a proportional relationship between x and y.

x	y
2	1.25
4	2.5
6	3.75
10	6.25

What is the constant of proportionality between x and y? Enter your answer as a decimal.

GO ON ▶

> **HINT: This item has four parts. In your test booklet, there will be designated answer spaces that correspond with each part of the item. Parts A and B are multiple-choice, while parts C and D are answer grids.**
>
> **Pay close attention to Part C. The question is asking for only the x-coordinate of the ordered pair, not both coordinates.**

VH080297_3:2:2.5:7.5

Use the information provided to answer Part A through Part D for question 8.

A chemist has two acid solutions. Solution A contains 10% acid, and solution B contains 30% acid. He will mix the two solutions to make 10 liters of a third solution, solution C, containing 25% acid.

The system of equations shown can be used to represent this situation.

$$\begin{cases} x + y = 10 \\ 0.10x + 0.30y = 2.5 \end{cases}$$

8. **Part A**

Which statement about the system of equations is true?

(A) In the system of equations, x represents the number of liters of acid in solution A, and y represents the number of liters of acid in solution B.

(B) In the system of equations, x represents the number of liters of acid in solution B, and y represents the number of liters of acid in solution A.

(C) In the system of equations, x represents the number of liters of solution A in solution C, and y represents the number of liters of solution B in solution C.

(D) In the system of equations, x represents the number of liters of solution B in solution C, and y represents the number of liters of solution A in solution C.

GO ON ▶

Part B

What does the expression $0.30y$ represent?

Ⓐ   the number of liters of acid in solution C that come from solution A

Ⓑ   the number of liters of acid in solution C that come from solution B

Ⓒ   the number of liters of solution A in solution C

Ⓓ   the number of liters of solution B in solution C

Part C

If the system of equations is graphed in a coordinate plane, what is the *x*-coordinate of the intersection of the two lines?

Part D

What is the number of liters of solution B the chemist mixes with solution A to create solution C containing 25% acid?

GO ON ▶

> **HINT: This is an open-response item. This item type requires you to show your reasoning and modeling in solving the item. Although you may have scratch paper, only the work shown in the box in the test booklet will be scored. Include all work and justifications/explanations as required by the item to fully support your answer. Show your work and explain your answer with clear and concise language.**

M20740

9. Two utility companies sell electricity in units of kilowatt-hours. The cost of kilowatt-hours for company P is shown in the table. The cost of kilowatt-hours for company M can be found by using the equation shown, where y represents the total cost in dollars for x kilowatt-hours.

Electricity Costs

Company P

Number of Kilowatt-hours	Total Cost (dollars)
1,250	150.00
1,650	198.00

**Company M**

$y = 0.15x$

GO ON ▶

- Use the information provided to find the unit rate in dollars per kilowatt-hour for each company. Show your work or explain your answers.

- Find the total cost in dollars of buying 2375 kilowatt-hours of electricity from the **least** expensive company.

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

GO ON ▶

Mathematics

HINT: During the actual test, you will see a stop sign at the end of each section. When you reach the stop sign, review the directions below it, and if there is time, review your answers from this section only. For the tutorial, ask your teacher if you have any questions about the directions below.

STOP
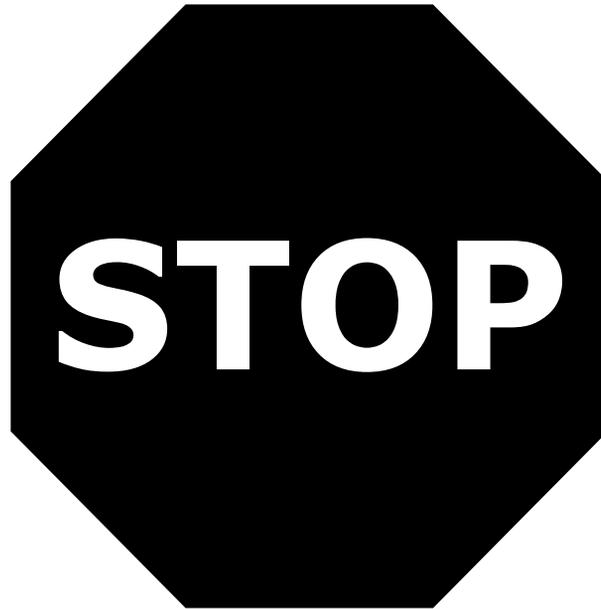
You have come to the end of the calculator section in Unit 1 of the test.

- **Review your answers in the calculator section of Unit 1 only.**
- **Then, close your test booklet and raise your hand to turn in your test materials.**

STOP