New York State
EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

New York State Testing Program
Grade 8
Mathematics Test

Released Questions

2025

New York State administered the Mathematics Tests in Spring 2025
and is making approximately 75% of the questions
from these tests available for review and use.

New York State Testing Program
Grades 3–8 Mathematics

Released Questions from 2025 Exams

Background

As in past years, SED is releasing large portions of the 2025 NYS Grades 3–8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2025, included in these released materials are at least 75 percent of the test questions that appeared on the 2025 tests (including all constructed-response questions) that counted toward students' scores. Additionally, SED is also providing a map that details what each released question measures and the correct response to each question. These released materials will help students, families, educators, and the public better understand the tests and the New York State Education Department's expectations for students.

Understanding Math Questions

Multiple-Choice Questions
Multiple-choice questions are designed to assess the New York State P–12 Next Generation Learning Standards for Mathematics. Mathematics multiple-choice questions will be used mainly to assess standard algorithms and conceptual standards. Multiple-choice questions incorporate both the grade-level standards and the "Standards for Mathematical Practices." Many questions are framed within the context of real-world applications or require students to complete multiple steps. Likewise, many of these questions are linked to more than one standard, drawing on the simultaneous application of multiple skills and concepts.

One-Credit Constructed-Response Questions
One-credit constructed-response questions require students to complete a task and provide only their final answer. These one-credit questions will often require multiple steps, assessing procedural skills, as well as conceptual understanding and application. While students may show how they arrived at their final answer, only the final answer will be scored.

Two-Credit Constructed-Response Questions
Two-credit constructed-response questions require students to complete tasks and show their work. These two-credit response questions will often require multiple steps, the application of multiple mathematics skills, and real-world applications. Many of the short-response questions will cover conceptual and application standards.

Three-Credit Constructed-Response Questions
Three-credit constructed-response questions ask students to show their work in completing two or more tasks or a more extensive problem. These three-credit response questions allow students to show their understanding of mathematical procedures, conceptual understanding, and application. Three-credit response questions may also assess student reasoning and the ability to critique the arguments of others. The scoring rubric for all constructed-response questions can be found in the grade-level Educator Guides at https://www.nysed.gov/state-assessment/grades-3-8-ela-and-math-test-manuals.

New York State P–12 Next Generation Learning Standards Alignment

The alignment(s) to the New York State P–12 Next Generation Learning Standards for Mathematics is/are intended to identify the primary analytic skills necessary to successfully answer each question. However, some questions measure proficiencies described in multiple standards, including a balanced combination of procedure and conceptual understanding. For example, two-credit and three-credit constructed-response questions require students to show an understanding of mathematical procedures, concepts, and applications.

These Released Questions Do Not Comprise a "Mini Test"

To ensure it is possible to develop future tests, some content must remain secure. This document is *not* intended to be representative of the entire test, to show how operational tests look, or to provide information about how teachers should administer the test; rather, its purpose is to provide an overview of how the test reflects the demands of the New York State P–12 Next Generation Learning Standards.

The released questions do not represent the full spectrum of the standards assessed on the State tests, nor do they represent the full spectrum of how the standards should be taught and assessed in the classroom. It should not be assumed that a particular standard will be measured by an identical question in future assessments.

Name: _____

New York State Testing Program

Mathematics Test
Session 1

Grade 8

Spring 2025

RELEASED QUESTIONS

Session 1

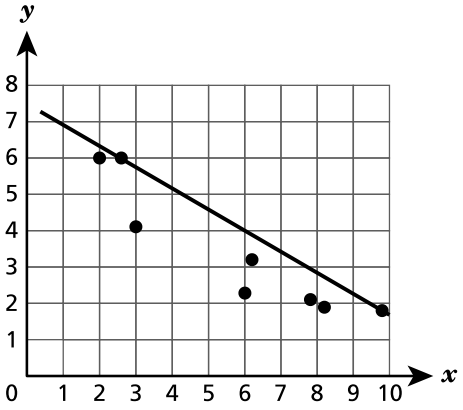
TIPS FOR TAKING THE TEST

Here are some ideas to help you do your best:

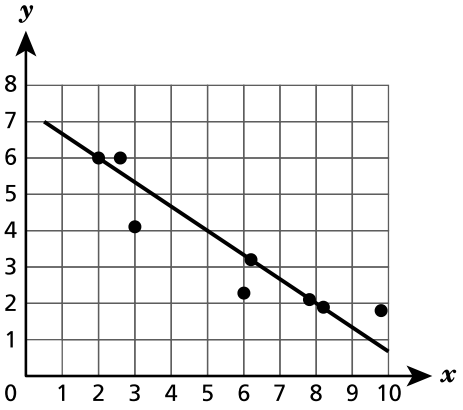
- Read each question carefully. Take your time.
- You have a ruler, a protractor, a reference sheet, and a calculator that you can use on the test if they help you answer the question.

2 A set of data is graphed on a scatter plot. Which scatter plot of the data shows a line that could be used to **best** model the relationship of the data?

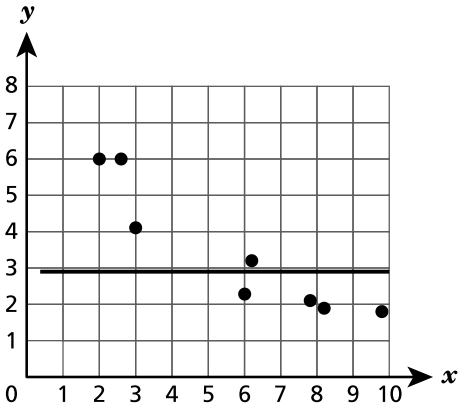
A



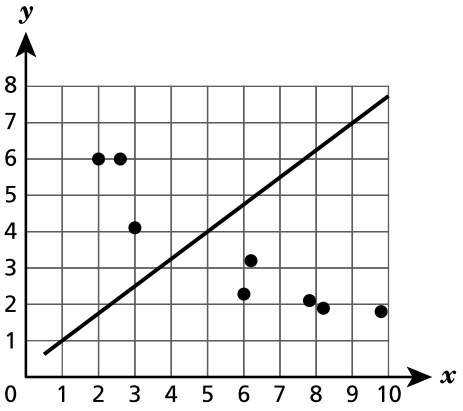
C



B

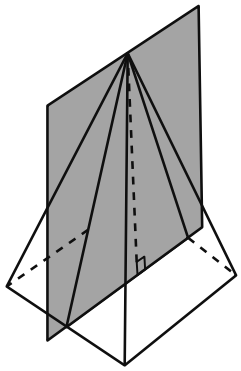


D



GO ON

4 A vertical plane intersects a right rectangular pyramid as shown below.



What is the resulting two-dimensional shape formed by the intersection of the plane and the pyramid?

A parallelogram

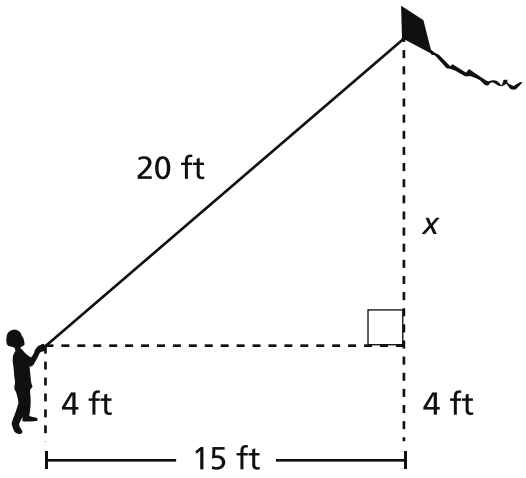
B rectangle

C trapezoid

D triangle

GO ON

7 The diagram below shows a person flying a kite. They let out 20 feet of string and are holding the end of the string 4 feet above the ground. The kite is directly above a spot on the ground that is 15 feet away from where they are standing.



Which equation can be used to determine the value of x ?

A $x^2 = 20^2 + 15^2$

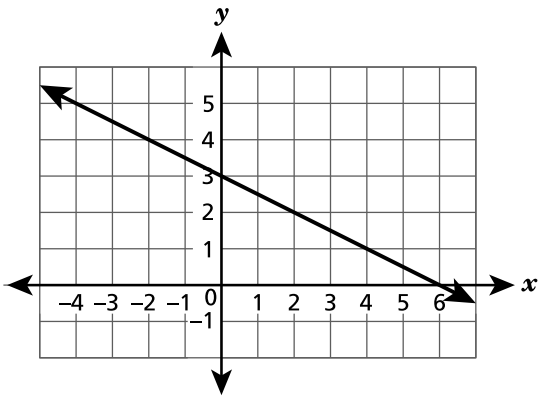
B $24^2 = 15^2 + x^2$

C $20^2 = 19^2 + x^2$

D $20^2 = 15^2 + x^2$

GO ON

8 The graph of a line is shown below.



What is the equation of the line?

A $y = -2x + 3$

B $y = -2x + 6$

C $y = -\frac{1}{2}x + 3$

D $y = -\frac{1}{2}x + 6$

12 A soccer ball has a diameter of 23 centimeters. What is the volume, to the nearest cubic centimeter, of the soccer ball?

A 1,593

B 6,371

C 12,741

D 50,965

14 An equation is shown below.

$$-6(x - 4) + 5x = -9x$$

Which value of x makes the equation true?

A -3

B -2.4

C 0.5

D 3

GO ON

15 A set of numbers is shown below.

$$\left\{\frac{1}{3},\ 1.1\overline{3},\ \sqrt{5},\ \frac{5}{2}\right\}$$

What number would need to be removed from the set so that the set contains only rational numbers?

A $\frac{1}{3}$

B $1.1\overline{3}$

C $\sqrt{5}$

D $\frac{5}{2}$

16 Which expression is equivalent to 3^5 ?

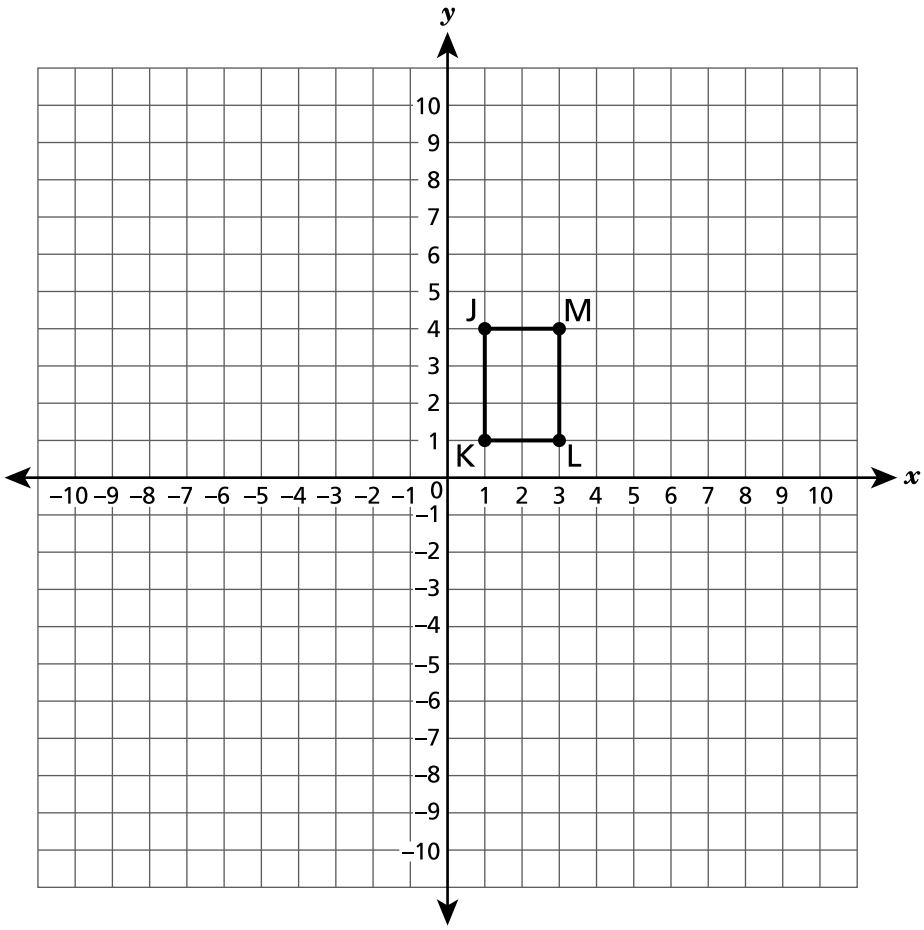
A $\frac{(3^6 \cdot 3^4)}{3^2}$

B $(3^2)^2 \cdot 3$

C $(3^3)^2$

D $\frac{3^{15}}{3^3}$

17 Rectangle $JKLM$ is graphed on the coordinate plane shown below. Rectangle $JKLM$ will be translated 5 units right and 2 units up to produce rectangle $J'K'L'M'$.



Which statement about the line segments of rectangle $J'K'L'M'$ is true?

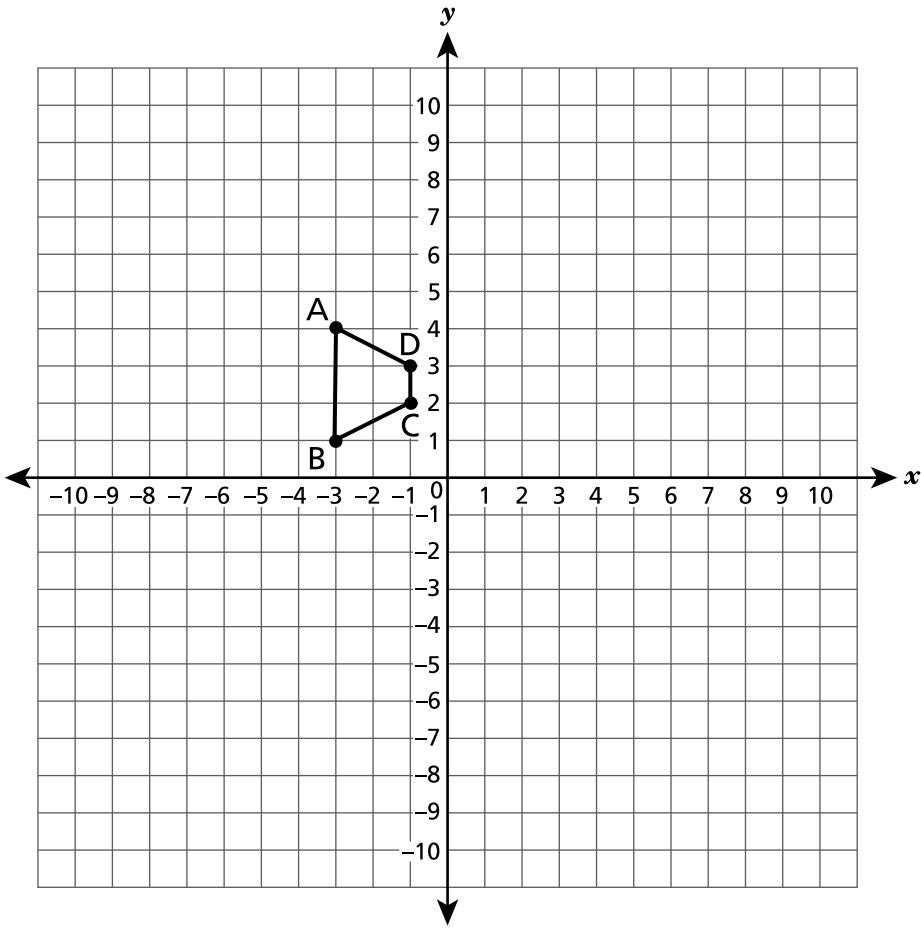
A $\overline{J'K'} \parallel \overline{J'M'}$

B $\overline{J'K'} \parallel \overline{L'M'}$

C $\overline{K'L'} \parallel \overline{J'K'}$

D $\overline{K'L'} \parallel \overline{L'M'}$

19 Figure $ABCD$ is shown on the coordinate plane below. The figure will be dilated by a scale factor of 2, with the center of the dilation at the origin. The resulting image will be figure $A'B'C'D'$.



What will be the coordinates of vertex A' ?

A $(-5, 6)$

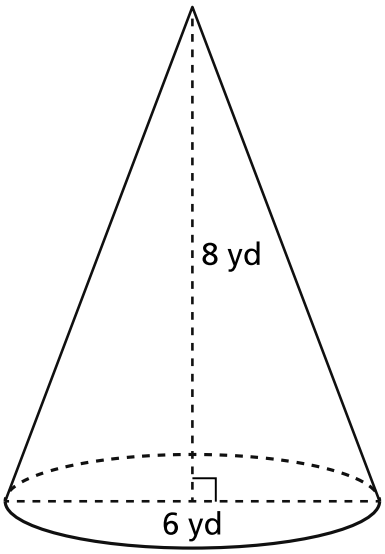
B $(-3, 6)$

C $(-3, 8)$

D $(-6, 8)$

GO ON

27 A diagram of a right cone is shown below.



What is the volume, in cubic yards, of the cone?

A 14π

B 24π

C 72π

D 96π

28 A transformation maps $\triangle ABC$ to $\triangle A'B'C'$. If $\triangle A'B'C'$ is similar but not congruent to $\triangle ABC$, which transformation occurred?

A a rotation about the origin

B a reflection over the y-axis

C a dilation with a scale factor not equal to 1

D a translation of 1 unit in both the x and y directions

GO ON

30 An equation is shown below.

$$8 - 12x = h(3x - 4)$$

For which value of h will this equation have no solutions?

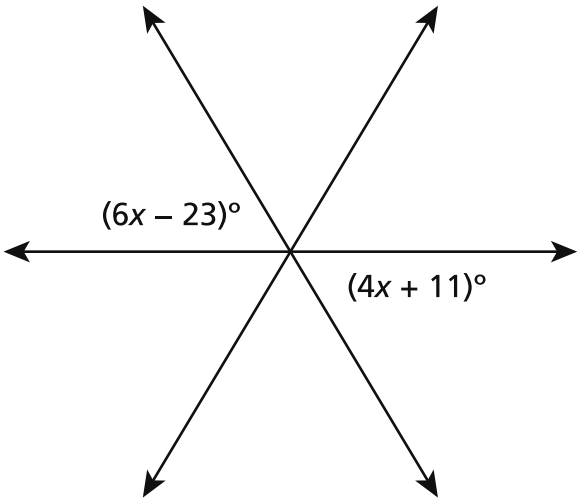
A -4

B -2

C 3

D 4

31 The diagram below shows three intersecting lines.



What is the value of x ?

A 6

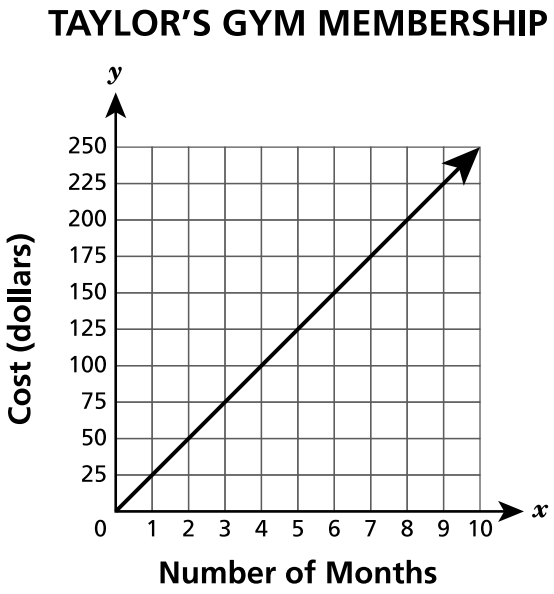
B 10.2

C 17

D 19.2

32 Alex and Taylor are comparing the costs of their gym memberships.

- The total cost, y, in dollars, of Alex's gym membership for x months is represented by the equation $y = 15x$.
- The total cost of Taylor's gym membership is represented by the graph shown below.



Which statement identifies the gym membership with the lower cost per month?

A Alex's gym membership at a cost of $\$10.00$ per month

B Alex's gym membership at a cost of $\$15.00$ per month

C Taylor's gym membership at a cost of $\$15.00$ per month

D Taylor's gym membership at a cost of $\$25.00$ per month

STOP

Grade 8
Mathematics Test
Session 1
Spring 2025

Name: _____

New York State Testing Program

Mathematics Test
Session 2

Grade 8

Spring 2025

RELEASED QUESTIONS

Session 2

TIPS FOR TAKING THE TEST

Here are some ideas to help you do your best:

- Read each question carefully. Take your time.
- You have a ruler, a protractor, a reference sheet, and a calculator that you can use on the test if they help you answer the question.
- Be sure to show your work when asked.
- Be sure to explain your answer when asked.

33 What is the value of the expression $2^5 \cdot 10^0 \cdot 3^{-2}$?

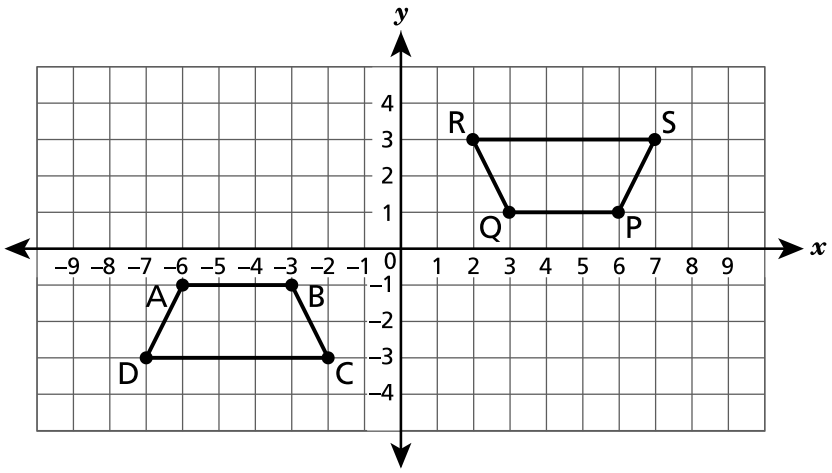
A -288

B -90

C $\frac{0}{9}$

D $\frac{32}{9}$

34 Trapezoid ABCD was rotated 180° about the origin to create trapezoid PQRS, as shown below.



Which statement about the trapezoids is true?

A Angle A is congruent to angle S.

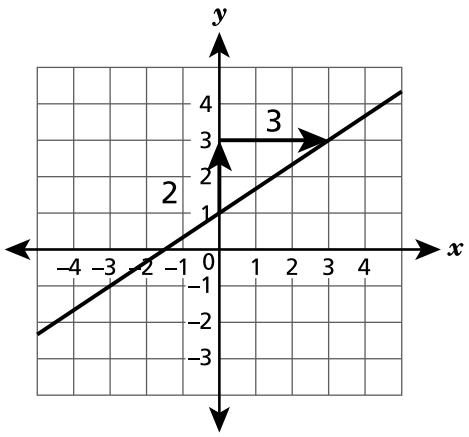
B Angle C is congruent to angle Q.

C Side BC is congruent to side QR.

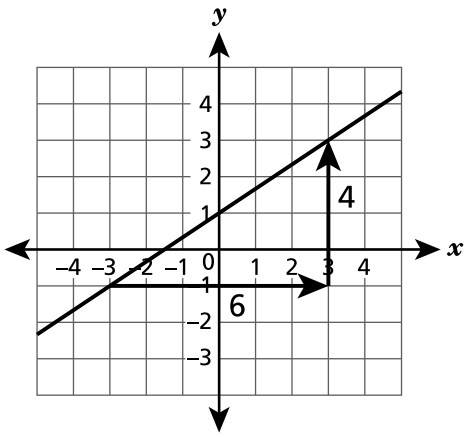
D Side DC is congruent to side RQ.

35 Brayden and Hannah were asked to calculate the slope of the same line. Brayden calculated the slope to be $\frac{2}{3}$ and Hannah calculated the slope to be $\frac{4}{6}$. Their work is shown below.

BRAYDEN'S WORK



HANNAH'S WORK



Which statement is true?

A Only Brayden calculated the slope correctly.

B Only Hannah calculated the slope correctly.

C Both Brayden and Hannah calculated the slope correctly.

D Neither Brayden nor Hannah calculated the slope correctly.

36 The table of values shown below represents a relation.

x	y
–2	–12
–1	–7
0	–2
1	3
2	8

Which statement describes the relation?

A The table represents a function because each input has only one output.

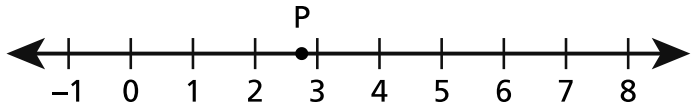
B The table represents a function because each output has only one input.

C The table does not represent a function because each input has only one output.

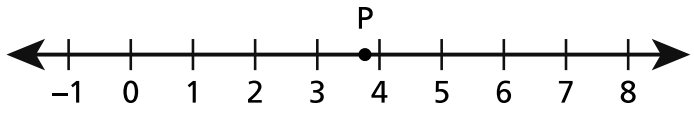
D The table does not represent a function because each output has only one input.

37 On which number line does point P represent the value of the expression $\sqrt{4} + \sqrt{10}$?

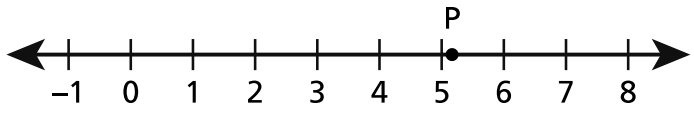
A



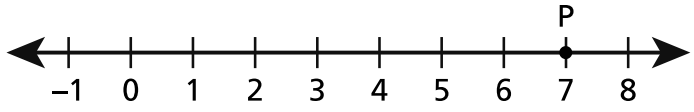
B



C

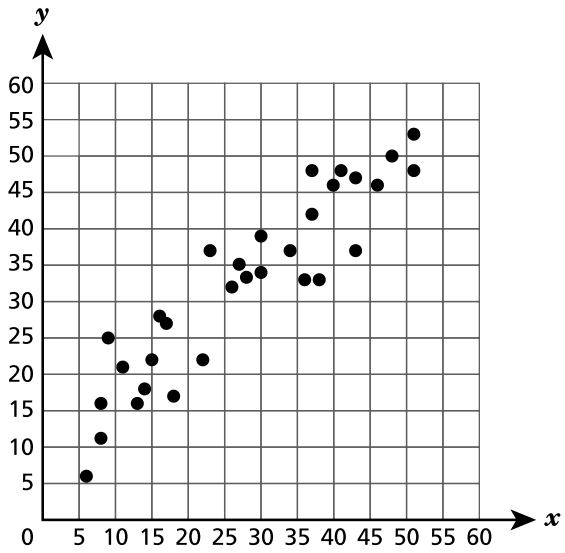


D



GO ON

38 A scatter plot is shown below.



Which statement **best** describes the association between x and y ?

A There is a positive, linear association.

B There is a negative, linear association.

C There is a positive, nonlinear association.

D There is a negative, nonlinear association.

39 **This question is worth 1 credit.**

A table of values for a linear function is shown below.

x	y
–18	–6
–8	–1
0	3
4	5
6	6

What is the rate of change for this function?

Answer _____

GO ON

40 **This question is worth 1 credit.**

A circular dart board has a circumference of 17.75π inches. What is the radius, in inches, of the dart board?

Answer _____ inches

41 **This question is worth 1 credit.**

David and Lisa each earn money by mowing lawns. They both charge a one time maintenance fee and an hourly rate. David's total charges, based on the number of hours he mows a lawn, are shown in the table below. The total charges, y, in dollars, for Lisa mowing the lawn for x hours is represented by the equation $y = 6x + 12$.

DAVID'S CHARGES

Time Mowed (hours)	Total Charges (dollars)
0.5	17.50
1	20.00
2	25.00

What is the difference, in dollars, between the one time maintenance fee David charges and the one time maintenance fee Lisa charges?

Answer $ _____

GO ON

42 **This question is worth 2 credits.**

Classify $\sqrt{1.44}$ as being rational or irrational.

Explain how you know your answer is correct.

43 **This question is worth 2 credits.**

The equations of two functions are shown below.

Function A: $y = 3x + 8$

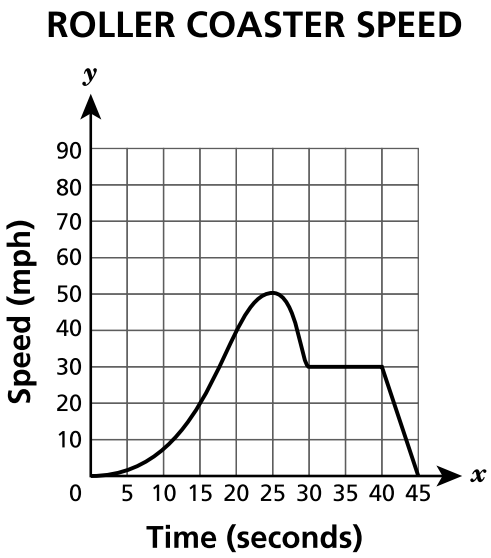
Function B: $y = x^2 + 2$

Classify each function as linear or nonlinear.

Explain how you determined your answer.

44 **This question is worth 2 credits.**

The graph shown below represents the time and speed of a roller coaster over the course of the entire ride.



Based on the graph, during what interval of time, in seconds, is the speed, in miles per hour, of the roller coaster constant? Be sure to include what the constant speed is, in miles per hour, for that interval in your answer.

Explain your answer.

45 **This question is worth 2 credits.**

An equation is shown below.

$$\frac{2}{3}(3x + 9) = x - 4$$

What value of x will make the equation true?

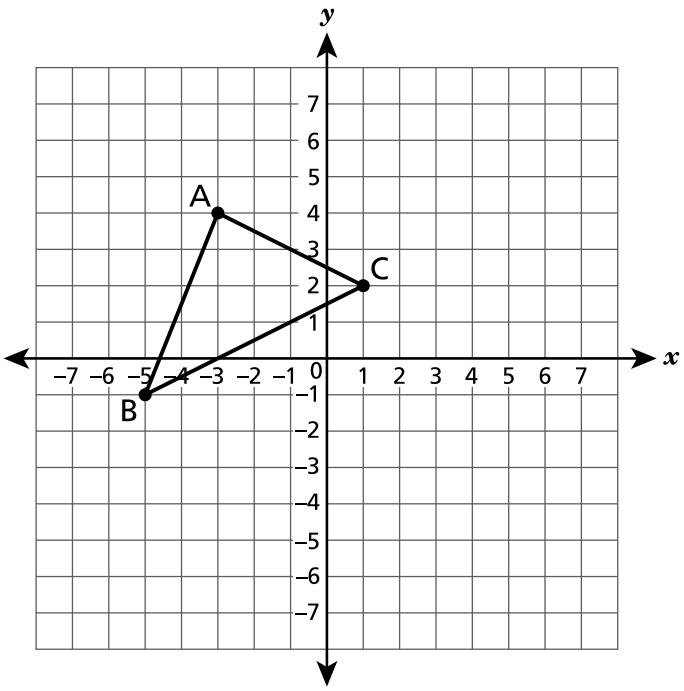
Show your work.

Answer $x =$ _____

GO ON

46 **This question is worth 2 credits.**

Triangle ABC is graphed on the coordinate plane shown below. Triangle ABC will be reflected over the y axis to create triangle $A'B'C'$.

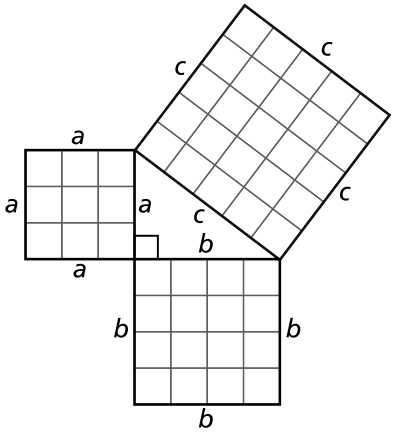


What will be the coordinates of vertex A' ?

Explain how you determined your answer.

47 **This question is worth 2 credits.**

A student used the diagram shown below to support their work in representing the relationship among the lengths of the sides, in units, of a right triangle.



The student then showed how the diagram relates to the Pythagorean theorem, but made an error as shown below.

$a^2 + b^2 = c^2$

$5^2 + 4^2 = 3^2$

$25 + 16 \neq 9$

$41 \neq 9$

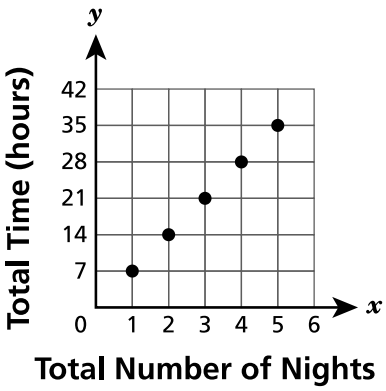
What is the error that the student made and what are the correct steps needed to show how the Pythagorean theorem shows the relationship among the lengths of the sides, in units, of the right triangle?

Explain your answer.

48 **This question is worth 3 credits.**

Kaley and Mark each tracked their total amount of sleep, to the nearest hour, for a science project and determined that their total hours of sleep is proportional to the total number of nights. The graph and the table shown below represent the sleep times for Kaley and Mark.

KALEY'S SLEEP TIME



MARK'S SLEEP TIME

Total Number of Nights	Total Time (hours)
2	18
3	27
4	36
5	45

Based on the graph and the table, determine who gets more sleep per night.

Explain how you determined your answer.

STOP

Grade 8
Mathematics Test
Session 2
Spring 2025

THE STATE EDUCATION DEPARTMENT

THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

2025 Mathematics Tests Map to the Standards

Grade 8

Question	Type	Key	Points	Standard	Cluster	Subscore	Secondary Standard(s)
Session 1							
2	Multiple Choice	C	1	NGLS.Math.Content.NY-8.SP.2	Statistics and Probability		
4	Multiple Choice	D	1	NGLS.Math.Content.NY-7.G.3	Geometry	Geometry	
7	Multiple Choice	D	1	NGLS.Math.Content.NY-8.G.7	Geometry	Geometry	
8	Multiple Choice	C	1	NGLS.Math.Content.NY-8.EE.6	Expressions and Equations	Expressions and Equations	
12	Multiple Choice	B	1	NGLS.Math.Content.NY-8.G.9	Geometry	Geometry	
14	Multiple Choice	A	1	NGLS.Math.Content.NY-8.EE.7b	Expressions and Equations	Expressions and Equations	
15	Multiple Choice	C	1	NGLS.Math.Content.NY-8.NS.1	Number Sense		NGLS.Math.Content.NY-8.EE.2
16	Multiple Choice	B	1	NGLS.Math.Content.NY-8.EE.1	Expressions and Equations	Expressions and Equations	
17	Multiple Choice	B	1	NGLS.Math.Content.NY-8.G.1c	Geometry	Geometry	
19	Multiple Choice	D	1	NGLS.Math.Content.NY-8.G.3	Geometry	Geometry	
27	Multiple Choice	B	1	NGLS.Math.Content.NY-8.G.9	Geometry	Geometry	
28	Multiple Choice	C	1	NGLS.Math.Content.NY-8.G.4	Geometry	Geometry	
30	Multiple Choice	A	1	NGLS.Math.Content.NY-8.EE.7a	Expressions and Equations	Expressions and Equations	
31	Multiple Choice	C	1	NGLS.Math.Content.NY-7.G.5	Geometry	Geometry	
32	Multiple Choice	B	1	NGLS.Math.Content.NY-8.EE.5	Expressions and Equations	Expressions and Equations	
Session 2							
33	Multiple Choice	D	1	NGLS.Math.Content.NY-8.EE.1	Expressions and Equations	Expressions and Equations	
34	Multiple Choice	C	1	NGLS.Math.Content.NY-8.G.1a	Geometry	Geometry	
35	Multiple Choice	C	1	NGLS.Math.Content.NY-8.EE.6	Expressions and Equations	Expressions and Equations	
36	Multiple Choice	A	1	NGLS.Math.Content.NY-8.F.1	Functions	Functions	
37	Multiple Choice	C	1	NGLS.Math.Content.NY-8.NS.2	Number Sense		
38	Multiple Choice	A	1	NGLS.Math.Content.NY-8.SP.1	Statistics and Probability		
39	Constructed Response	n/a	1	NGLS.Math.Content.NY-8.F.4	Functions	Functions	
40	Constructed Response	n/a	1	NGLS.Math.Content.NY-7.G.4	Geometry	Geometry	
41	Constructed Response	n/a	1	NGLS.Math.Content.NY-8.F.2	Functions	Functions	
42	Constructed Response	n/a	2	NGLS.Math.Content.NY-8.EE.2	Expressions and Equations	Expressions and Equations	NGLS.Math.Content.NY-8.NS.1
43	Constructed Response	n/a	2	NGLS.Math.Content.NY-8.F.3	Functions	Functions	
44	Constructed Response	n/a	2	NGLS.Math.Content.NY-8.F.5	Functions	Functions	
45	Constructed Response	n/a	2	NGLS.Math.Content.NY-8.EE.7b	Expressions and Equations	Expressions and Equations	
46	Constructed Response	n/a	2	NGLS.Math.Content.NY-8.G.3	Geometry	Geometry	
47	Constructed Response	n/a	2	NGLS.Math.Content.NY-8.G.6	Geometry	Geometry	
48	Constructed Response	n/a	3	NGLS.Math.Content.NY-8.EE.5	Expressions and Equations	Expressions and Equations	

This item map is intended to identify the primary analytic skills necessary to successfully answer each question. However, some questions measure proficiencies described in multiple standards, including a balanced combination of procedural and conceptual understanding.