

Pennsylvania

PSSA

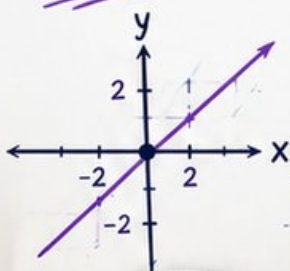
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

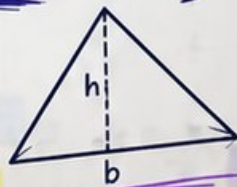
$$y = mx + b$$



**BUILD
CONFIDENCE.
SHARPEN SKILLS.
ACE YOUR
EXAM!**

Practice
Today
Succeed
Tomorrow!

$$A = \frac{1}{2}bh$$



7 PRINTED
TESTS



2 ONLINE
TESTS



Use these **two additional** online practice tests
for extra review after the printed tests in this book.

7 Pennsylvania PSSA Grade 8 Math Practice Tests

Grade 8 PSSA Review for Careful Reading and Accurate Solving



Seven complete 40-question Grade 8 PSSA practice rounds with real numbers, exponents, scientific notation, equations, functions, transformations, geometry, data analysis, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



Copyright ©

Testinar Inc



Published by Testinar Inc

Testinar.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



Copyright ©

Welcome, Pennsylvania Grade 8 Problem Solver!

Seven focused rounds for sharper PSSA math thinking

This book gives you seven full Grade 8 PSSA math practice tests. Each round is built to help you recognize structure, reason with real numbers and exponents, analyze linear relationships, connect equations with graphs, and explain your thinking with care.

Your Pennsylvania Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

Read

Model

Verify

How to Use This Book

A seven-session plan for confident Grade 8 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot an exponent rule, equation, graph, transformation, diagram, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

Pennsylvania review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.



What Is Inside?

Seven PSSA tests, 280 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Real and irrational numbers, integer exponents, scientific notation, equations, and careful reading.
Tests 4–6	Slope, systems of equations, functions, inequalities, transformations, congruence, and similarity.
Test 7	Pythagorean reasoning, volume, data analysis, linear models, probability, mixed review, and stamina.
Answer Pages	Compact keys and explanations that show why each answer works.

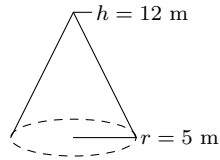
The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.



Scan me!
For more practice
& answers

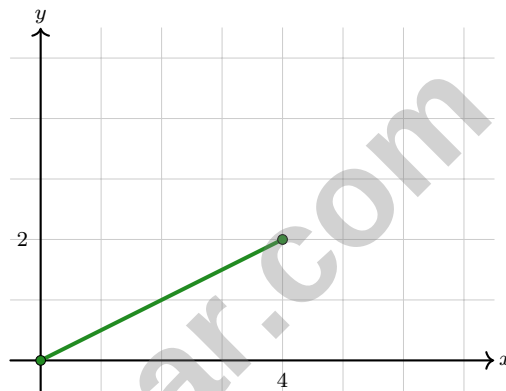
Table of Contents

★ Practice Test 1	_____	13
★ Practice Test 2	_____	30
★ Practice Test 3	_____	48
★ Practice Test 4	_____	63
★ Practice Test 5	_____	80
★ Practice Test 6	_____	95
★ Practice Test 7	_____	111
Practice Test Answer Keys	_____	128
Practice Test Answers and Explanations	_____	133



1)

A cone has a radius of 5 m and a height of 12 m. What is its volume? Use $\pi \approx 3.14$.

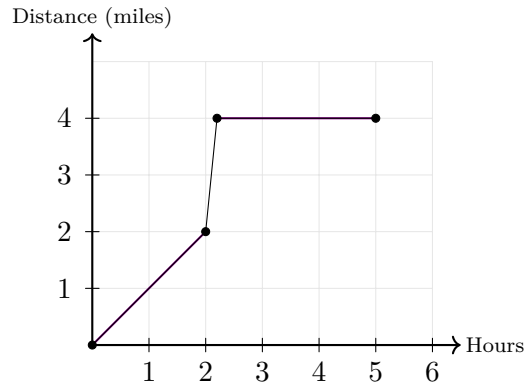
☐ A. 314 m^3 ☐ C. 1884 m^3 ☐ B. 942 m^3 ☐ D. 2826 m^3 

2)

What is the constant of proportionality for this graph?

☐ A. $\frac{1}{4}$ ☐ C. 2☐ B. 4☐ D. $\frac{1}{2}$ 

Scan me!
For more practice
& answers

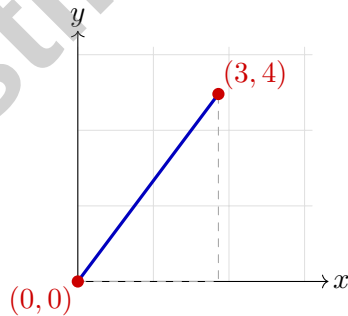


3)

A traveler's distance graph shows: 0 to 2 hours rising, then a jump, then flat. What does the jump represent?

- ☐ A. The traveler rested without moving ☐ C. This graph cannot represent a real physical scenario (discontinuity)
☐ B. The traveler waited at the same distance ☐ D. The traveler went backward in distance

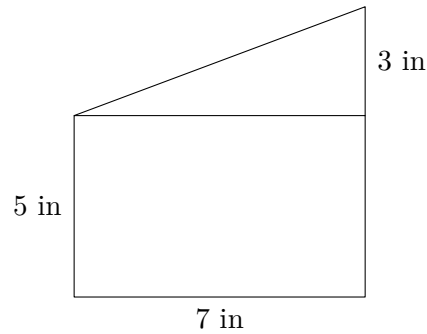
4) Two points on a coordinate plane are located at $(0, 0)$ and $(3, 4)$. What is the distance between these two points?



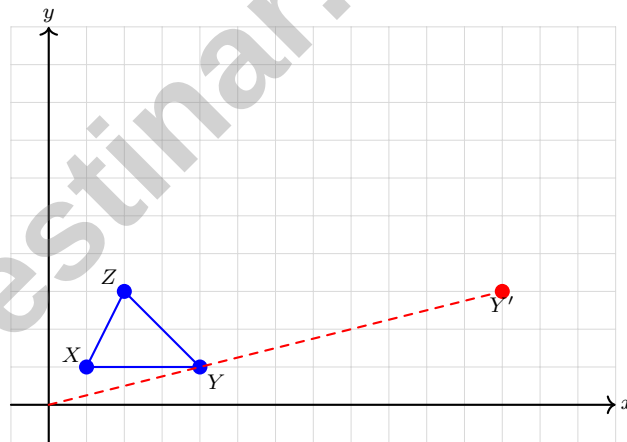
- ☐ A. 5 ☐ C. 12
☐ B. 7 ☐ D. 25



- 5) A composite figure is made of a rectangle (7 in by 5 in) with a right triangle ($base = 7$ in, $height = 3$ in) on one side. Find the total area.



- ☐ A. 24.5 in^2 ☐ C. 45.5 in^2
☐ B. 35 in^2 ☐ D. 56 in^2
- 6) Triangle XYZ has vertices at $X(1, 1)$, $Y(4, 1)$, and $Z(2, 3)$. If dilated by scale factor 3 from the origin, where is the vertex that corresponds to Y ?



- ☐ A. $(12, 3)$ ☐ C. $(7, 4)$
☐ B. $(4, 1)$ ☐ D. $(3, 3)$



Scan me!
For more practice
& answers

1) Which transformation does **NOT** preserve both distance and angle measure?

☐ A. Translation

☐ C. Rotation

☐ B. Reflection

☐ D. Dilation

2) Solve for x : $6x - 3(x + 2) = 3$

☐ A. $x = 3$

☐ C. $x = 1$

☐ B. $x = 2$

☐ D. $x = 9$

3) A cube-shaped storage container has a volume of 512 cubic feet. What is the side length of the cube?

4) A scientist says the mass of a virus is 1.5×10^{-20} grams and a bacterium is 5×10^{-15} grams. The bacterium is $\frac{5 \times 10^{-15}}{1.5 \times 10^{-20}} \approx 3.3 \times 10^5$ times more massive. Is this correct?

☐ A. No; the quotient should be about 3.3×10^4 .

☐ C. Yes, the calculation is correct.

☐ B. No; the exponent should be 10^{-35} .

☐ D. No; the exponent should be negative.

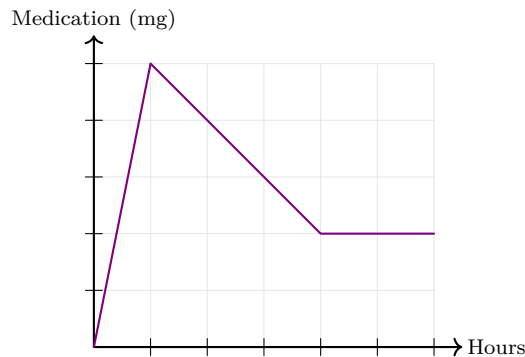
5) Points $(-1, 5)$ and $(2, 14)$ lie on a line. Find the slope.



- 6) Two runners train with proportional relationships. Runner A: $y = 6x$ (miles per hour y at time x in hours). Runner B: $y = 8x$. Who runs faster?
- ☐ A. Runner A ☐ C. They run at the same speed
☐ B. Cannot determine from the equations ☐ D. Runner B
- 7) A function has both a zero and an x -intercept at the same point. Which statement is true?
- ☐ A. This is impossible; a zero and x -intercept are different ☐ C. They are related but occur at different points
☐ B. They are the same thing; a zero occurs where $f(x) = 0$, which is the x -intercept ☐ D. Only nonlinear functions can have both
- 8) A building is 60 feet tall. A rope is attached to the top and staked to the ground 25 feet away from the base. What is the length of the rope?
- ☐ A. 35 feet ☐ C. 85 feet
☐ B. 65 feet ☐ D. 3600 feet
- 9) A circular pool with radius 4 m has a rectangular platform (length 8 m, width 3 m) removed from its center. Find the remaining area. Use $\pi \approx 3.14$.
- ☐ A. 26.24 m^2 ☐ C. 41.44 m^2
☐ B. 40.56 m^2 ☐ D. 74.12 m^2



Scan me!
For more practice
& answers



1)

A patient receives a medication injection. The dosage spikes immediately, then decreases as the body metabolizes it, and stabilizes at a baseline. Which interval shows the body absorbing the drug most rapidly?

- ☐ A. From 0 to 1 hour (absorption/rise) ☐ D. The rise and decay are equally rapid
☐ B. From 1 to 4 hours (decay)
☐ C. From 4 to 6 hours (plateau)

2) Which statement about the table below is true?

	Debate	Science	Total
Math	36	84	120
English	48	72	120
Science	60	60	120
Total	144	216	360

- ☐ A. The relative frequency of Math students in the Debate club is $\frac{36}{144} = 0.25$.
☐ B. The relative frequency of Debate club among Math students is $\frac{36}{360} \approx 0.10$.
☐ C. The marginal relative frequency of Debate is $\frac{144}{360} = 0.40$.
☐ D. The joint relative frequency of Science and English is $\frac{84}{360} = 0.20$.



Scan me!
For more practice
& answers

3)

Test Scores	88	92	90	86	94
-------------	----	----	----	----	----

Five students scored as shown. The mean is 90. Calculate the MAD.

☐ A. 2

☐ C. 2.4

☐ B. 3

☐ D. 4

4) Five athletes compete in a race. In how many ways can they finish in 1st, 2nd, and 3rd place?

☐ A. $5^3 = 125$

☐ C. $5 \times 4 \times 3 = 60$

☐ B. $5! = 120$

☐ D. $\binom{5}{3} = 10$

5) Convert $0.\overline{81}$ to a fraction in simplest form.

☐ A. $\frac{81}{100}$

☐ C. $\frac{81}{90}$

☐ B. $\frac{1}{81}$

☐ D. $\frac{81}{99} = \frac{9}{11}$

6) Which is larger: $\sqrt{15}$ or $\sqrt{14}$?

☐ A. They are equal

☐ C. $\sqrt{14}$

☐ B. Cannot compare

☐ D. $\sqrt{15}$

7) A right triangle has legs of 3 and 4 units. The hypotenuse is $\sqrt{25}$ units. What is the hypotenuse?

☐ A. 25 units

☐ C. 12 units

☐ B. 7 units

☐ D. 5 units

8) Which pair of numbers are both irrational?

☐ A. $\sqrt{121}$ and π

☐ C. $-\frac{3}{7}$ and $\sqrt{15}$

☐ B. $0.505005\dots$ (non-repeating) and $\sqrt{16}$

☐ D. $\sqrt{15}$ and $\sqrt{24}$



Pennsylvania PSSA Grade 8 Practice Test Answer Keys**How to use this section with a Grade 8 student:**

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next Pennsylvania PSSA practice test.

Testinar.com



Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** **CC.2.3.8.A.1** Volume of a cone: $V = \frac{1}{3}\pi r^2 h = \frac{1}{3} \times 3.14 \times 5^2 \times 12 = \frac{1}{3} \times 942 = 314 \text{ m}^3$.
- 2) **Choice D is correct.** **CC.2.4.8.B.1** Constant of proportionality $k = \frac{y}{x} = \frac{2}{4} = \frac{1}{2}$. The line passes through (0,0) and (4,2).
- 3) **Choice C is correct.** **CC.2.2.8.C.2** A jump discontinuity in a distance-time graph would mean the distance changes suddenly without showing the travel in between, which is not physically realistic for normal motion. A real distance-time graph should change continuously.
- 4) **Choice A is correct.** **CC.2.3.8.A.3, CC.2.3.8.A.1** The distance formula uses the Pythagorean Theorem: $d = \sqrt{(3-0)^2 + (4-0)^2} = \sqrt{9+16} = \sqrt{25} = 5$ (the 3-4-5 triple).
- 5) **Choice C is correct.** **CC.2.1.8.E.4** Rectangle area = $7 \times 5 = 35 \text{ in}^2$. Triangle area = $\frac{1}{2} \times 7 \times 3 = 10.5 \text{ in}^2$. Total = $35 + 10.5 = 45.5 \text{ in}^2$.
- 6) **Choice A is correct.** **CC.2.3.8.A.2** Apply dilation: $(x, y) \rightarrow (kx, ky)$ where $k = 3$. Point $Y(4, 1) \rightarrow Y'(4 \times 3, 1 \times 3) = (12, 3)$.
- 7) **The correct answer is 2.0×10^6 .** **CC.2.1.8.E.4** Rewrite: $1.2 \times 10^6 + 0.8 \times 10^6 = (1.2 + 0.8) \times 10^6 = 2.0 \times 10^6$ (coefficient 2.0 is in standard form).
- 8) **Choice A is correct.** **CC.2.4.8.B.2** In $d = mt + b$ form, $m = 45$ is the slope. Here it represents speed: 45 miles per hour.
- 9) **Choice C is correct.** **CC.2.2.8.B.3** GCF is 5: $5x^2 + 35x + 50 = 5(x^2 + 7x + 10) = 5(x+2)(x+5)$.
- 10) **The correct answer is -4 .** **CC.2.2.8.B.3** Solving gives $x > -4$, so the boundary value is -4 .
- 11) **Choice B is correct.** **CC.2.4.8.B.2** The vertical line test states that a graph is a function if no vertical line intersects it more than once. Options A and D are vertical lines, so they fail. Option C is a circle and fails at multiple points. Option B, a parabola, is a function.
- 12) **Choice C is correct.** **CC.2.4.8.B.2** Slope of h : -2 . From k 's table: $(5-7)/(1-0) = -2$. Both have slope -2 .
- 13) **Choice B is correct.** **CC.2.3.8.A.2** Congruent trapezoids have equal heights. Since Trapezoid 1 has a height of 4 inches and Trapezoid 2 is congruent, Trapezoid 2 also has a height of 4 inches.
- 14) **Choice B is correct.** **CC.2.2.8.B.2** The orange rectangle has width 2; the purple has width 1. Scale factor is $\frac{1}{2}$.
- 15) **The correct answer is 2.** **CC.2.3.8.A.1** The boundary line is $y = -\frac{1}{3}x + 2$, whose y -intercept is 2.
- 16) **Choice B is correct.** **CC.2.1.8.E.1** Co-interior angles are supplementary; their sum is always 180° .
- 17) **Choice A is correct.** **CC.2.3.8.A.3** $d = \sqrt{(8-2)^2 + (13-5)^2} = \sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10$.
- 18) **The correct answer is $(-2, 2)$.** **CC.2.3.8.A.1** Step 1: Reflect across y -axis: $(2, 5) \rightarrow (-2, 5)$. Step 2: Translate 3 down: $(-2, 5) \rightarrow (-2, 2)$.
- 19) **Choice C is correct.** **CC.2.3.8.A.2** Adjacent angles on a straight line are supplementary, so they sum to 180° . Thus $x = 180 - 65 = 115^\circ$.
- 20) **The correct answer is A,D.** **CC.2.2.8.B.3** A: Multiplying by 4 gives $2x - 3 = 20$, then $2x = 23$, so $x = 11.5$ (correct). B: Dividing by 2 before clearing the denominator is wrong. C: Changing only the numerator is not a legal move. D: Multiply by 4 $\Rightarrow 2x - 3 = 20$, add 3 $\Rightarrow 2x = 23$, divide by 2 $\Rightarrow x = 11.5$ (correct). E: Subtracting 4 and multiplying by the numerator is invalid. Correct answers: A and D.
- 21) **Choice B is correct.** **CC.2.3.8.A.1** $343 = \frac{1}{3} \times s^2 \times 7$, so $s^2 = 147$. Therefore $s = \sqrt{147} = 7\sqrt{3} \text{ cm}$.
- 22) **Choice A is correct.** **CC.2.4.8.B.1** Set $(n-2) \times 180 = 1260$. Then $n-2 = 7$, so $n = 9$ (a nonagon).
- 23) **Choice C is correct.** **CC.2.4.8.B.1** When most points cluster tightly around an imaginary upward line with few outliers far from it, the correlation is strong. Wide scatter indicates weak correlation.
- 24) **Choice C is correct.** **CC.2.4.8.B.2** Relative frequency of mobile-app users among online shoppers: $\frac{108}{180} = 0.60 = 60\%$.
- 25) **Choice A is correct.** **CC.2.4.8.B.2** Absolute deviations: $|2-5| = 3$ (three times), $|4-5| = 1$ (twice), $|6-5| = 1$, $|8-5| = 3$ (twice). Sum = $9 + 2 + 1 + 6 = 14$. MAD = $14/8 = 1.75$.
- 26) **Choice B is correct.** **CC.2.3.8.A.2** First sock: 8 choices. Second sock: 7 remaining (since it must be different). Total: $8 \times 7 = 56$.



Scan me!
For more practice
& answers

You Are Building Test Stamina

Hi, Stamina Builder!

◇ This broad and demanding book gave you seven strong Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Completing practice tests builds more than math knowledge. It builds the focus needed to think clearly for a long stretch. ◇

★ **Remember this:** That stamina matters. On real test day, calm pacing can be just as important as remembering a formula. ★

Stamina Skills

- **Breathe:** Reset before a difficult page.
- **Pace:** Do not spend too long in one place.
- **Return:** Come back to skipped questions with fresh eyes.
- **Finish Strong:** Use the last minutes to check.

Grade 8 test-day tip: Practice a simple reset: pause, breathe, reread, then choose your next step.

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

Your Test-Stamina Coach

PRACTICE TODAY SUCCEED TOMORROW!

Give your child the confidence and skills they need with **7 full-length Grade 8 Math** practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, strengthening problem-solving abilities, and achieving success on test day!

GRADE 8

Practice
Today
Succeed
Tomorrow!

Algebra

Geometry

Statistics

WHAT'S INSIDE?



Standards-Aligned Practice

Questions designed to cover essential Grade 8 math standards.



Variety of Question Types

Multiple-choice, short answer, and more to build well-rounded skills.



Real-World Applications

Engaging problems that connect math to everyday life.



Step-by-Step Progress

Track improvement and build confidence with every test.



Build Skills & Boost Confidence

Strengthen understanding and feel prepared for test day.

COVERS ALL ESSENTIAL TOPICS

- | | |
|---------------------------------------|----------------------------|
| ✓ The Number System | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Pythagorean Theorem |
| ✓ Ratios & Proportional Relationships | ✓ Volume & Surface Area |
| ✓ Linear Equations | ✓ Transformations |
| ✓ Functions | ✓ Inequalities |
| ✓ Geometry | ✓ Data Analysis & Graphing |
| ✓ Measurement & Data | ✓ And More! |



2 EXTRA ONLINE PRACTICE TESTS INCLUDED!

Use these two additional online practice tests for extra review after the printed tests.

testinar.com/math8

BUILD CONFIDENCE. SHARPEN SKILLS. ACE YOUR EXAM!