

3

New Mexico

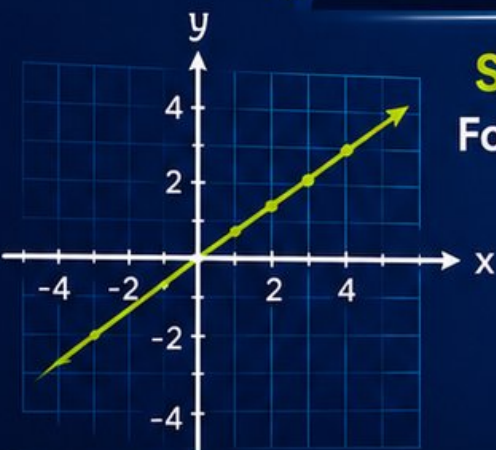
NM MSSA

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$V = s^3$$



$$y = mx + b$$
$$2x + 5 = 13$$
$$x = 4$$



3 PRINTED TESTS



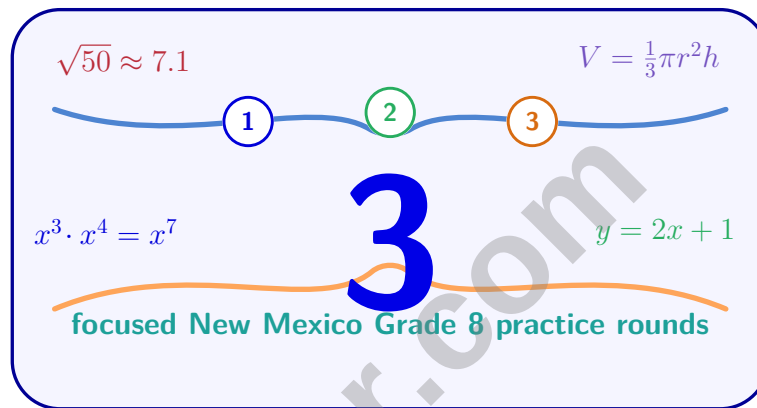
2 ONLINE TESTS



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

3 New Mexico NM MSSA Grade 8 Math Practice Tests

Grade 8 NM MSSA Practice for Stronger Reasoning and Accuracy



Three complete 40-question Grade 8 NM MSSA 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



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Welcome, New Mexico Grade 8 Problem Solver!

Three focused rounds for sharper NM MSSA math thinking

This book gives you three full Grade 8 NM MSSA 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 New Mexico 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 three-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.

New Mexico 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?

Three NM MSSA tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Test 3	Functions, systems, transformations, geometry, data analysis, and multi-step problem solving.
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.



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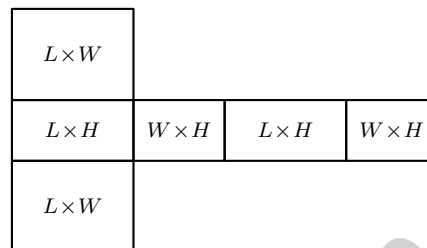
Table of Contents



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- 1) In 6 years, a father will be three times as old as his son. Right now, the father is 30 years older than his son. How old is the son now?

- ☐ A. 9 ☐ C. 15
☐ B. 12 ☐ D. 18



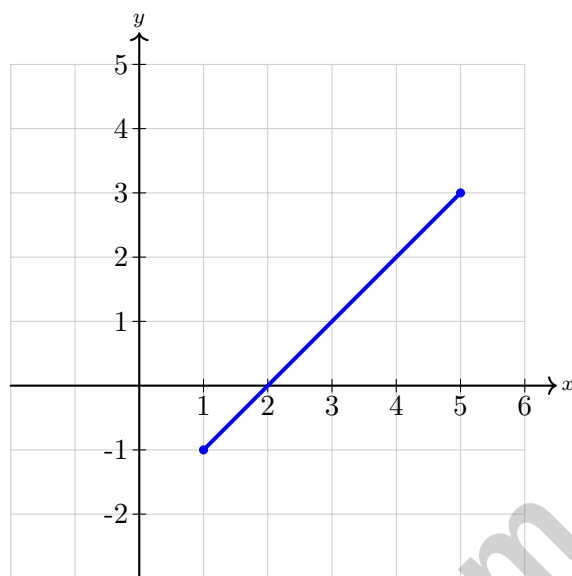
- 2) Net of a rectangular prism

A rectangular prism has dimensions 4 cm (L) $\times$ 3 cm (W) $\times$ 2 cm (H). If we unfold it into a net, how many faces does the net show?

- ☐ A. 3 faces ☐ C. 6 faces
☐ B. 4 faces ☐ D. 8 faces
- 3) Under a reflection across the line $y = x$, the point (4, 7) maps to which point?
- ☐ A. (7, 4) ☐ C. (4, -7)
☐ B. (-4, -7) ☐ D. (-7, -4)

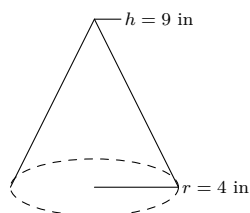


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4)

What is the slope of the line shown?

☐ A. 1☐ C. 3☐ B. 2☐ D. 45) Solve: $-x \leq 5$ ☐ A. $x \leq -5$ ☐ C. $x \geq -5$ ☐ B. $x \leq 5$ ☐ D. $x \geq 5$ 

6)

The cone shown has radius 4 in and height 9 in. What is its volume? (Use $\pi \approx 3.14$.)☐ A. 113.04 in^3 ☐ C. 301.44 in^3 ☐ B. 150.72 in^3 ☐ D. 452.16 in^3 

- 7) The mass of the Sun is approximately 2×10^{30} kg. How many times more massive is the Sun than Earth, which has mass 6×10^{24} kg?

- 8) Convert the mixed decimal $0.5\overline{8}$ to a fraction in simplest form.

- 9) Which is smallest: $\sqrt{10}$, $\sqrt{19}$, or $\sqrt{35}$?

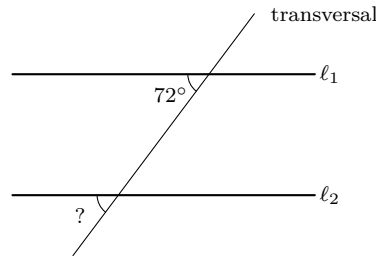
- 10) A fitness app models burned calories as $C = 0.08w + 50$, where C is calories and w is weight in pounds. The app predicts a 150-lb person burns 62 calories. A user actually burns 65 calories. Which is true?

- ☐ A. The model overestimated by 3 calories
- ☐ B. The model underestimated by 3 calories
- ☐ C. The residual is -3
- ☐ D. The model is perfectly accurate

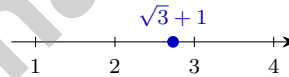


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- 1) Two parallel lines are cut by a transversal. If one corresponding angle is 72° , what is the other corresponding angle?



- ☐ A. 72° ☐ C. 118°
☐ B. 108° ☐ D. 144°
- 2) Which is larger: $\sqrt{15}$ or $\sqrt{14}$?
- ☐ A. They are equal ☐ C. $\sqrt{14}$
☐ B. Cannot compare ☐ D. $\sqrt{15}$
- 3) On a number line, where would $\sqrt{3} + 1$ fall?



- ☐ A. Between 1 and 2 ☐ C. Between 3 and 4
☐ B. Greater than 4 ☐ D. Between 2 and 3
- 4) Compare 9.9×10^2 and 1.0×10^3 . Which is true?

- ☐ A. 9.9×10^2 is larger ☐ C. They are equal
☐ B. Cannot be determined ☐ D. 1.0×10^3 is larger



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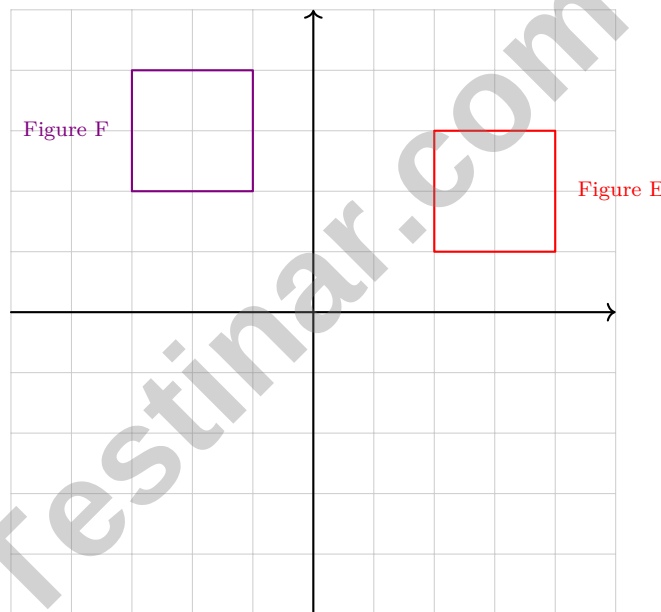
5) Which fraction equals $0.\overline{12}$?

- ☐ A. $\frac{12}{100}$
☐ B. $\frac{1}{12}$

- ☐ C. $\frac{12}{90}$
☐ D. $\frac{12}{99} = \frac{4}{33}$

6) Two cylinders have the same height of 10 cm. Cylinder A has radius 3 cm, Cylinder B has radius 6 cm. Which statement is true?

- ☐ A. Both have the same SA
☐ B. A has greater SA
☐ C. B has exactly twice the SA of A
☐ D. B has greater SA but not exactly twice



7)

Figures E and F are congruent. If Figure E was transformed to Figure F, which transformation(s) could have been applied?

- ☐ A. Only a translation
☐ B. Only a reflection
☐ C. A reflection and a translation
☐ D. A rotation and a dilation



1) A residual is the vertical distance between a data point and the trend line. Which set of residuals indicates the BEST fit?

- ☐ A. Residuals of 15, -12, 18, -14, 20 ☐ C. Residuals of -20, -18, 22, 25, 19
☐ B. Residuals of -1, 0, 1, 0, -1 ☐ D. Residuals of -5, -4, 3, 4, 2

2) A triangle has area 36 cm^2 . If the triangle is dilated by a scale factor of $\frac{2}{3}$, what is the area of the dilated triangle?

- ☐ A. 16 cm^2 ☐ C. 36 cm^2
☐ B. 24 cm^2 ☐ D. 54 cm^2

3) The table shows $f(x)$. If $f(x) = 8$, what is x ?

x	1	2	3	4
$f(x)$	4	6	8	10

- ☐ A. 1 ☐ C. 3
☐ B. 2 ☐ D. 4

4) Which statement is false?

- ☐ A. Every whole number is rational ☐ C. $\sqrt{9}$ is rational
☐ B. No irrational number can be written as a fraction ☐ D. π is rational

5) $\sqrt{24}$ is closest to which integer?

- ☐ A. 4 ☐ C. 5
☐ B. 6 ☐ D. 3



6) Between which two consecutive integers does $\sqrt{24}$ fall?

n	n^2	Compare to 24
3	9	Too small
4	16	Too small
5	25	Too large

☐ A. Between 3 and 4

☐ C. Between 5 and 6

☐ B. Between 6 and 7

☐ D. Between 4 and 5

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

8) The population of a country is 3.2×10^7 . What is this population in standard form?

☐ A. 3,200,000

☐ C. 320,000,000

☐ B. 3,200,000,000

☐ D. 32,000,000

9) Convert $0.9\overline{3}$ to a fraction in simplest form.

☐ A. $\frac{93}{100}$

☐ C. $\frac{93}{99}$

☐ B. $\frac{9}{30}$

☐ D. $\frac{84}{90} = \frac{14}{15}$

10) Two hikers start from the same point, walking in opposite directions. One walks at 4 mph, the other at 5 mph. After how many hours are they 27 miles apart?



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New Mexico NM MSSA 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 New Mexico NM MSSA practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (8.EE.C.8c) Let s = son's current age. Then father's age is $s + 30$. In 6 years, $s + 36 = 3(s + 6)$. So $s + 36 = 3s + 18$, which gives $18 = 2s$ and $s = 9$.
- 2) **Choice C is correct.** (8.G.C.9) A rectangular prism has 6 rectangular faces (3 pairs of congruent rectangles). A complete net shows all 6 faces.
- 3) **Choice A is correct.** (8.G.A.1) Reflection across the line $y = x$ swaps coordinates: $(x, y) \rightarrow (y, x)$. So $(4, 7) \rightarrow (7, 4)$. Distractor D represents reflection across $y = -x$.
- 4) **Choice A is correct.** (8.EE.B.6) Using points $(1, -1)$ and $(5, 3)$: slope $= \frac{3 - (-1)}{5 - 1} = \frac{4}{4} = 1$.
- 5) **Choice C is correct.** (8.EE.C.8b) Multiply by -1 (FLIP): $x \geq -5$.
- 6) **Choice B is correct.** (8.G.C.9) $V = \frac{1}{3}\pi r^2 h = \frac{1}{3} \times 3.14 \times 16 \times 9 = \frac{1}{3} \times 452.16 = 150.72 \text{ in}^3$.
- 7) **The correct answer is 3.33×10^5 .** (8.EE.A.3) Divide: $\frac{2 \times 10^{30}}{6 \times 10^{24}} = \frac{2}{6} \times 10^6 = \frac{1}{3} \times 10^6 \approx 3.33 \times 10^5$.
- 8) **The correct answer is $\frac{53}{90}$.** (8.NS.A.1) Set $x = 0.5\bar{8} = 0.5888\dots$. Then $10x = 5.8\bar{8}$ and $100x = 58.\bar{8}$. Subtracting: $90x = 53$, so $x = \frac{53}{90}$.
- 9) **The correct answer is $\sqrt{10}$.** (8.NS.A.2) Since square root is an increasing function, compare the radicands: $10 < 19 < 35$. Therefore $\sqrt{10} < \sqrt{19} < \sqrt{35}$.
- 10) **Choice B is correct.** (8.SP.A.3) Residual $= 65 - 62 = 3$. The actual value exceeds the prediction by 3 calories; the model underestimated.
- 11) **Choice C is correct.** (8.G.B.7) Rate per 2 weeks: $\$15 / \$100 = 15\%$ per 2 weeks. There are $52 \text{ weeks} / 2 = 26$ two-week periods in a year. APR: $0.15 \times 26 = 3.9 = 390\%$.
- 12) **Choice C is correct.** (8.EE.A.1) When dividing powers with the same base, subtract exponents: $\frac{x^7}{x^3} = x^{7-3} = x^4$.
- 13) **Choice C is correct.** (8.EE.A.4) Correct rule: multiply coefficients and add exponents. The student got $2 \times 4 = 8$ correct, but mistakenly multiplied $3 \times 4 = 12$ instead of adding $3 + 4 = 7$.
- 14) **Choice C is correct.** (8.EE.B.5) Unit rate is slope: $\frac{3}{6} = \frac{1}{2}$. For every 1 unit of x , y increases by $\frac{1}{2}$.
- 15) **Choice D is correct.** (8.EE.C.7) Subtract 7: $-4y = 8$. Divide by -4 : $y = -2$.
- 16) **Choice D is correct.** (8.EE.C.8a) Substitute $y = 3x$ into $x + y = 12$: $x + 3x = 12$, so $4x = 12$, giving $x = 3$. Then $y = 3(3) = 9$. Solution: $(3, 9)$.
- 17) **Choice C is correct.** (8.EE.C.7) GCF is 5: $5x^2 + 35x + 50 = 5(x^2 + 7x + 10) = 5(x + 2)(x + 5)$.
- 18) **Choice B is correct.** (8.EE.C.8b) For $y \geq x$, the solution region is above the line. The boundary is solid because the inequality includes equality.
- 19) **The correct answer is 5.9.** (8.NS.A.2) $\sqrt{35} \approx 5.916$. Rounding to the nearest tenth: $|5.916 - 5.9| = 0.016$ and $|5.916 - 6.0| = 0.084$. Since $0.016 < 0.084$, we round down to 5.9.
- 20) **Choice C is correct.** (8.F.A.2) Both have slope $\frac{1}{2}$. Intercepts are 3 and -2 . Parallel lines.
- 21) **Choice B is correct.** (8.F.A.3) The y -differences are $16 - 10 = 6$, $22 - 16 = 6$, $28 - 22 = 6$. Since x changes by 2 each time, the rate of change is $\frac{6}{2} = 3$, constant and linear.
- 22) **The correct answer is A,C.** (8.NS.A.1) Statement A is true because rational numbers are closed under addition. Statement C is true because any terminating decimal, such as $0.75 = \frac{3}{4}$, is rational. Statement B is false because two irrational numbers can multiply to a rational number, for example $\sqrt{2} \times \sqrt{8} = 4$. Statement D is false because integers are rational. Statement E is false because perfect squares have rational square roots, not irrational ones.
- 23) **Choice A is correct.** (8.F.B.4) Initial altitude is 200 cm (intercept). Altitude decreases by 5 cm per second (negative slope). Equation: $h = -5t + 200$.
- 24) **Choice A is correct.** (8.F.B.5) A y -intercept occurs where $x = 0$, giving point $(0, -3)$. An x -intercept occurs where $y = 0$, giving point $(2, 0)$.
- 25) **Choice B is correct.** (8.G.A.2) Congruent figures have equal corresponding sides. The congruent trapezoid has the same parallel sides: 8 cm and 12 cm.



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Hi, Grade 8 Math Star!

◇ You finished this practice set with real effort. Grade 8 math asks you to connect ideas, explain your thinking, and stay steady through multi-step problems. ◇

★ **Remember this:** Every page you completed helped build stronger habits: reading carefully, choosing a method, showing work, and checking whether the answer makes sense. You practiced across 3 full Grade 8 practice tests, and that repeated effort matters. ★

What You Built

- **Focus:** You stayed with challenging questions.
- **Accuracy:** You learned to slow down when details matter.
- **Reasoning:** You practiced explaining why a method works.
- **Readiness:** You are more prepared than when you started.

Grade 8 test-day tip: Before test day, review the questions that made you pause. Those are the best teachers.

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

Jay Daie

Your Grade 8 Math Friend

PRACTICE TODAY, ACHIEVE TOMORROW!

GRADE
8

Give your child the edge they need with **3 full-length** Grade 8 Math practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, boosting confidence, and preparing for success on test day!



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



2 Extra Online Practice Tests Included!

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

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PRACTICE. PREPARE. SUCCEED.



Testinar

More Practice. More Confidence.
Better **Results**.