

4

New Mexico

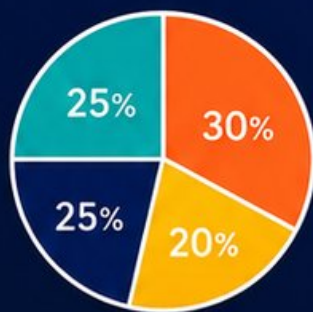
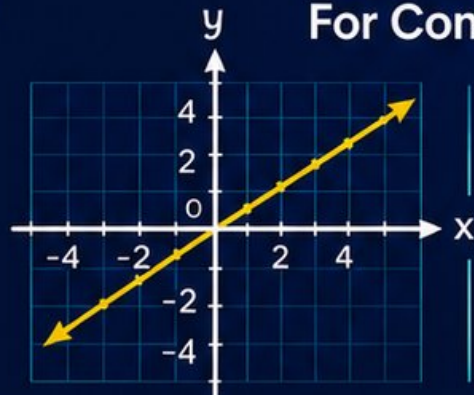
NM MSSA

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

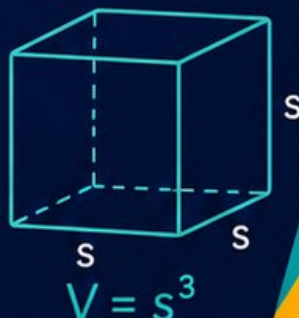


$$y = mx + b$$

$$2x - 3y = 6$$

$$\sqrt{x^2 + y^2}$$

$$A = bh$$



4 PRINTED TESTS



2 ONLINE TESTS



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



4 New Mexico NM MSSA Grade 8 Math Practice Tests

Focused NM MSSA Practice for Grade 8 Skills and Test Readiness



Four 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



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, New Mexico Grade 8 Problem Solver!

Four focused rounds for sharper NM MSSA math thinking

This book gives you four 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 four-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?

Four NM MSSA tests, 160 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–4	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.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	29
★ Practice Test 3	_____	46
★ Practice Test 4	_____	61
Practice Test Answer Keys	_____	77
Practice Test Answers and Explanations	_____	80

1) Which relation is a function?

- ☐ A. A student and the clubs they joined (a student may join more than one club).
- ☐ B. A book title and its author (a book has multiple authors).
- ☐ C. A person and the phone numbers they use (a person may use more than one phone number).
- ☐ D. A country and its capital (one country, one capital).

2) A student earns \$15 per hour. Which table represents this relationship?

Hours	1	2	3
Earnings (\$)	15	30	45

What is the slope?

- ☐ A. 15
- ☐ B. $\frac{1}{15}$
- ☐ C. 30
- ☐ D. $\frac{15}{30}$
- 3) Two lines intersect and form four angles. If one angle measures 72° , what are the measures of the other three angles?
- ☐ A. $72^\circ, 72^\circ, 72^\circ$
- ☐ B. $72^\circ, 108^\circ, 108^\circ$
- ☐ C. $108^\circ, 108^\circ, 108^\circ$
- ☐ D. $90^\circ, 90^\circ, 90^\circ$
- 4) A trend line has equation $y = 2.5x - 5$. What would be the predicted value of y when $x = 10$?
- ☐ A. 30
- ☐ B. 25
- ☐ C. 20
- ☐ D. 15

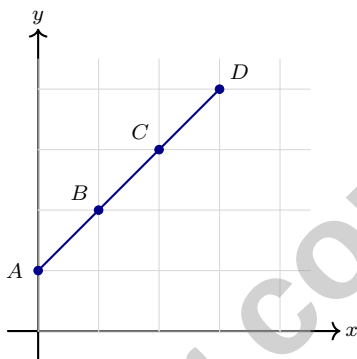


Scan me!
For more practice
& answers

- 5) Three similar figures X , Y , and Z have corresponding sides in the ratios $X : Y = 3 : 4$ and $Y : Z = 4 : 7$. If X has a side of 6 cm, what is the length of the corresponding side in Z ?

- ☐ A. 14 cm ☐ C. 8 cm
☐ B. 10.5 cm ☐ D. 18 cm

- 6) From the graph, identify which point is on the function f .



Which ordered pair represents $f(2)$?

- ☐ A. (2, 1) ☐ C. (2, 3)
☐ B. (3, 4) ☐ D. (1, 2)

- 7) If x is a whole number and $\sqrt{x}$ is rational, then x must be:

- ☐ A. Irrational ☐ C. A perfect square
☐ B. Odd ☐ D. Greater than 10

- 8) A login code uses 3 distinct digits from the set $\{0, 1, 2, 3, 4, 5\}$. How many codes are possible?

- ☐ A. $6 + 5 + 4 = 15$ ☐ C. $6^3 = 216$
☐ B. $6 \times 5 \times 4 = 120$ ☐ D. $\binom{6}{3} = 20$



9) Solve for x : $x^3 = 343$

10) In a catalog of 480 products, 288 are in stock and 192 are on backorder. Among in-stock items, 216 are discounted. What is the joint relative frequency of products that are both in stock and discounted? Express as a decimal.

11) If $a < \sqrt{n} < a + 1$ where a is a positive integer, then which statement is true?

☐ A. $n = a^2$

☐ C. $a^2 < n < (a + 1)^2$

☐ B. $n = (a + 1)^2$

☐ D. n is rational

12) Which is the best estimate of $\sqrt{50}$?

☐ A. 5.0

☐ C. 7.1

☐ B. 6.5

☐ D. 8.9

13) What power of 10 completes the conversion $304,000,000 = 3.04 \times ?$

☐ A. 10^7

☐ C. 10^9

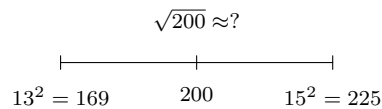
☐ B. 10^6

☐ D. 10^8



Scan me!
For more practice
& answers

- 1) Which is a reasonable approximation for $\sqrt{200}$?



- ☐ A. 12
 ☐ C. 16
☐ B. 18
 ☐ D. 14
- 2) A table shows the relationship between hours worked and pay earned.

Hours	2	4	6	8
Pay (\$)	18	36	54	72

What is the rate of change (slope) of pay with respect to hours worked?

- ☐ A. \$8 per hour
 ☐ C. \$10 per hour
☐ B. \$12 per hour
 ☐ D. \$9 per hour
- 3) A coffee shop has fixed costs of \$400 per day and variable costs of \$2 per cup sold. If cups sell for \$5 each, about how many cups must be sold to break even?
- ☐ A. 100 cups
 ☐ C. 134 cups
☐ B. 120 cups
 ☐ D. 160 cups
- 4) The table below shows preferences for sports among 100 students.

	Football	Basketball	Total
Boys	35	20	55
Girls	15	30	45
Total	50	50	100

How many boys prefer basketball?

- ☐ A. 15
 ☐ C. 35
☐ B. 20
 ☐ D. 50



Scan me!
For more practice
& answers

5)

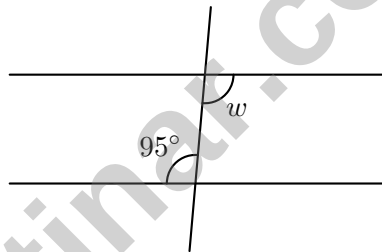
Dataset	Mean	MAD
Set A	50	3
Set B	50	9

Which interpretation correctly compares the two data sets?

- ☐ A. Set A has three times fewer values than Set B
☐ B. Set B's values are less predictable
☐ C. Set A and Set B have the same spread
☐ D. Set B has a higher mean
- 6) A jar has 8 buttons: 3 white and 5 black. Two buttons are drawn without replacement. What is the probability that the first is white and the second is black?

- ☐ A. $\frac{3}{8}$
☐ B. $\frac{8}{56}$

- ☐ C. $\frac{15}{56}$
☐ D. $\frac{5}{16}$



7)

Two parallel lines are cut by a transversal. The angle 95° and angle w are alternate interior angles. What is w ?

- ☐ A. 5°
☐ B. 85°

- ☐ C. 95°
☐ D. 175°



1) Two angles are supplementary. One angle measures 5 times the other. What is the measure of the larger angle?

☐ A. 30° ☐ B. 36° ☐ C. 90° ☐ D. 150°

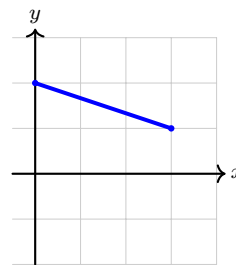
2) Which number is closest to $\sqrt{30}$?

☐ A. 5.4☐ B. 5.7☐ C. 5.6☐ D. 5.5

3) Which set of ordered pairs does NOT represent a function?

☐ A. $\{(0, 5), (1, 6), (2, 7), (3, 8)\}$ ☐ B. $\{(1, 1), (2, 4), (3, 9), (4, 16)\}$ ☐ C. $\{(1, 3), (2, 3), (3, 3), (4, 3)\}$ ☐ D. $\{(2, 4), (2, 5), (3, 6), (4, 7)\}$

4) Which graph best represents a line with slope $-\frac{1}{3}$?

☐ A. Red line (left)☐ B. Neither has slope $-\frac{1}{3}$ ☐ C. Both have slope $-\frac{1}{3}$ ☐ D. Blue line (right)

Scan me!

For more practice
& answers

+ -

63

× ÷

Testinar.com

- 5) A trapezoid has a top base of 5 cm, a bottom base of 9 cm, and two equal legs. If the perimeter is 30 cm, what is the length of each leg?

☐ A. 6 cm☐ C. 8 cm☐ B. 7 cm☐ D. 9 cm

- 6) Use the table below to find the y -intercept of the linear function:

x	1	3	5
y	9	17	25

- 7) If $h(x) = 3x$, what is $h(-2)$?

☐ A. -6☐ C. -2☐ B. 6☐ D. 3

- 8) Point $D(4, 5)$ undergoes a dilation centered at the origin with scale factor 2. What is the distance from the origin to the dilated point D' ?

☐ A. $\sqrt{41}$ ☐ C. 18☐ B. $2\sqrt{41}$ ☐ D. 9

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.



Scan me!
For more practice
& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (8.F.A.1) Each country has exactly one capital city. The other relations can assign more than one output to a single input.
- 2) **Choice A is correct.** (8.EE.B.5) Using points (1, 15) and (2, 30): $\text{slope} = \frac{30 - 15}{2 - 1} = \frac{15}{1} = 15$ dollars per hour.
- 3) **Choice B is correct.** (8.G.B.7) Vertical angles are congruent. Adjacent angles are supplementary: $180 - 72 = 108^\circ$. The four angles are $72^\circ, 108^\circ, 72^\circ, 108^\circ$.
- 4) **Choice C is correct.** (8.SP.A.2) $y = 2.5(10) - 5 = 25 - 5 = 20$.
- 5) **Choice A is correct.** (8.G.A.4) From $X : Y = 3 : 4$, side in Y is $6 \times \frac{4}{3} = 8$ cm. From $Y : Z = 4 : 7$, side in Z is $8 \times \frac{7}{4} = 14$ cm. Verify: composite ratio $X : Z = \frac{3}{4} \times \frac{4}{7} \times 6 = \frac{3 \times 7 \times 6 \times 7}{4 \times 7} = 14$ cm.
- 6) **Choice C is correct.** (8.F.A.1) At $x = 2$, the function passes through point C which is at (2, 3), so $f(2) = 3$.
- 7) **Choice C is correct.** (8.NS.A.1) For whole numbers, a rational square root means the square root is actually a whole number. That happens only for perfect squares such as 1, 4, 9, 16, and 25.
- 8) **Choice B is correct.** (8.EE.C.7b) First digit: 6 choices. Second digit: 5 remaining (no repetition). Third: 4 remaining. Total: $6 \times 5 \times 4 = 120$.
- 9) **The correct answer is 7.** (8.EE.A.2) $\sqrt[3]{343} = 7$ because $7 \times 7 \times 7 = 343$.
- 10) **The correct answer is 0.45.** (8.SP.A.4) Joint relative frequency: $\frac{216}{480} = 0.45$.
- 11) **Choice C is correct.** (8.NS.A.2) If $a < \sqrt{n} < a + 1$, then squaring all parts gives $a^2 < n < (a + 1)^2$.
- 12) **Choice C is correct.** (8.NS.A.2) Since $7^2 = 49$ and $7.1^2 = 50.41$, we have $\sqrt{50} \approx 7.07$.
- 13) **Choice D is correct.** (8.EE.A.3) Moving the decimal 8 places left to get 3.04 gives the exponent 8.
- 14) **Choice D is correct.** (8.NS.A.1) Let $x = 0.\overline{111}$. Then $1000x = 111.\overline{111}$. Subtracting: $999x = 111$, so $x = \frac{111}{999} = \frac{1}{9}$.
- 15) **Choice D is correct.** (8.G.C.9) The rectangular prism has surface area $2(16 + 12 + 12) = 80 \text{ cm}^2$. The cube has surface area $6(2^2) = 24 \text{ cm}^2$. The shared 2×2 face is counted twice, so subtract $2(4)$. The composite surface area is $80 + 24 - 8 = 96 \text{ cm}^2$.
- 16) **Choice B is correct.** (8.G.A.1) To undo a translation, apply the opposite (inverse) vector. If you moved by (5, -2), move back by (-5, 2). This is the additive inverse: $(5, -2) + (-5, 2) = (0, 0)$.
- 17) **Choice D is correct.** (8.EE.B.6) Parallel lines have the same slope. Since the first line has slope 4, the parallel line must also have slope 4.
- 18) **The correct answer is A, E.** (8.EE.C.8c) A: Let a = apples, o = oranges. Then $a + o = 30$ and $1 \cdot a + 2 \cdot o = 45$. Two equations, two unknowns.
E: Let w = width, ℓ = length. Then $\ell = w + 2$ and $2w + 2\ell = 24$. Two equations, two unknowns.
B: The wheat row is 50 m; corn is 60 m. This is one equation or direct calculation, not a system.
C: This is a computation, not a system.
D: This gives a constant meeting time, not requiring a system to answer "when do they meet?"—already stated as 2 hours.
- 19) **Choice A is correct.** (8.EE.C.8b) Distribute: $2x - 2 \geq 4$. Add 2: $2x \geq 6$. Divide by 2: $x \geq 3$.
- 20) **Choice B is correct.** (8.G.C.9) Use $V = \pi r^2 h$: $942 = 3.14 \times r^2 \times 12$. Since $3.14 \times 12 = 37.68$, $r^2 = 942 \div 37.68 = 25$, so $r = 5$ cm.
- 21) **Choice B is correct.** (8.SP.A.3) The data covers 5 to 20 minutes; predicting at 25 minutes is beyond the observed range, making it extrapolation.
- 22) **Choice C is correct.** (8.G.B.7) Interest: $I = 5000 \times 0.05 \times 4 = \$1,000$. Total: $5000 + 1000 = \$6,000$.
- 23) **Choice C is correct.** (8.EE.A.1) $(2^5)^2 = 2^{5 \cdot 2} = 2^{10}$. The other choices do not simplify to 2^{10} .
- 24) **Choice C is correct.** (8.EE.A.4) Evaluate each: A) 2×10^4 , B) 3×10^4 , C) 3×10^6 , D) 2×10^4 . Choice C is largest at $3 \times 10^6 = 3,000,000$.
- 25) **Choice D is correct.** (8.EE.B.5) Slope = $\frac{8}{2} = 4$. The line passes through (0, 0) and (2, 8).
- 26) **Choice D is correct.** (8.EE.C.7) Subtract $4x$ from both sides: $9 = 2$, which is false. This equation has no solution.



You Are Building Test Stamina

Hi, Stamina Builder!

◇ This carefully paced book gave you four steady 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, ACHIEVE TOMORROW!

Give your child the confidence and skills they need with **4 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!

4



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.



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!



4 PRINTED TESTS



2 ONLINE TESTS



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