

4

COMPLETE

Alaska AK STAR

Grade **MATH**

PRACTICE TESTS

5

Standards-Based Test Prep with
Mixed Review, Word Problems,
and **Full Answer Key**



- ✓ **4 COMPLETE PRACTICE TESTS**
Built to reflect the test format and rigor



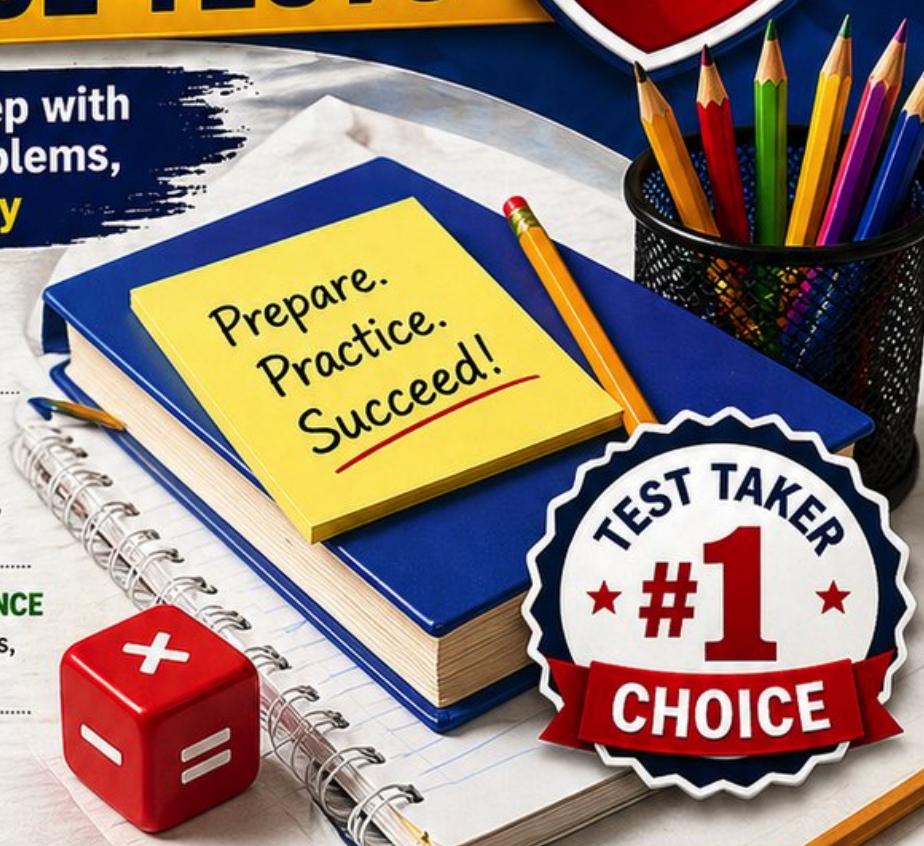
- ✓ **COVERS ALL ESSENTIAL TOPICS**
Numbers & Operations, Fractions, Decimals, Geometry, Measurement, Data & Probability, and more



- ✓ **STRENGTHEN SKILLS & CONFIDENCE**
Mixed review, challenging questions, and strategic practice



- ✓ **FULL ANSWER KEY INCLUDED**
Detailed explanations for every question



TEST TAKER
★ **#1** ★
CHOICE



BUILD STRONG
MATH SKILLS
& TEST READINESS



IMPROVE ACCURACY,
SPEED, AND
PROBLEM SOLVING



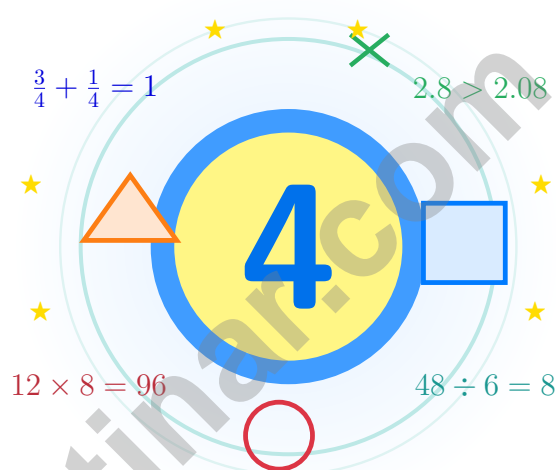
PERFECT FOR
CLASSROOM,
HOME, OR
SELF-STUDY



ALIGNED TO
ALASKA
STATE STANDARDS
(AK STAR)

4 Alaska AK STAR Grade 5 Math Practice Tests

Four chances to read carefully, solve smartly, and grow stronger



Four full tests, a smart quick review, mission-style strategy pages,
and student-tested support that help Grade 5 mathematicians from
The Last Frontier build calm, careful, confident habits.

Jay Daie and Reza Nazari



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Hello, Alaska – Four Tests, Four Wins

Four chances to grow your math mind one careful step at a time

Alaska Grade 5: This Mission Is for You

This book gives you four chances to read closely, solve carefully, and level up your math thinking. Mathematicians in the Last Frontier work the way explorers cross Denali – one careful step at a time, watching every detail, never bluffing past a tricky bend.

You do not need to feel perfect before you begin. You just need to stay curious, use strategies, and learn from every correction. That is how confident mathematicians are built.

Look

Look at the problem
like a careful detective.

Test

Test your idea one
careful step at a time.

Repair

Repair what was off
and try the next one.

A strong mission habit for Alaska: keep your work neat, estimate when it helps, label units carefully, and never let one hard question decide your mood for the whole page.

Four Tests, One Routine

A four-step routine that turns practice into real improvement

Step 1: Read

Read the quick review pages first.
Wake up the big Grade 5 ideas before the test starts so your brain is already warmed up.

Step 2: Try

Try one full test with full attention.
Find a calm corner, settle in, and aim for careful, honest choices before quick ones.

Step 3: Reflect

Reflect on which skills want more sunlight.
Circle missed questions, sort out what went sideways, and notice which skills are calling for attention.

Step 4: Lift

Lift those skills before the next test.
Read the explanation, fix the work, and carry that lesson into the very next test.



A Four-Week Alaska Mission Map

Week	Mission Focus
Week 1	Take Test 1. Read it like a frontier map – notice the terrain before you start crossing it.
Week 2	Take Test 2 and aim careful attention at multi-digit operations and word problems with bigger numbers.
Week 3	Take Test 3 to sharpen fractions, decimals, and place value – the tools that always show up on long trails.
Week 4	Take Test 4 and bring everything home: calm pacing, neat steps, careful checking, confident finish.



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Grade 5 Mathematics Reference Materials

PERIMETER AND AREA

Perimeter of Rectangle $P = 2l + 2w$ or $P = 2(l + w)$

Area of Rectangle $A = l \times w$

Area of Triangle $A = \frac{1}{2} \times b \times h$

Volume of Rectangular Prism $V = l \times w \times h$

LENGTH

Customary

1 foot (ft) = 12 inches (in.)

1 yard (yd) = 3 feet (ft)

1 yard (yd) = 36 inches (in.)

Metric

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

1 kilometer (km) = 1,000 meters (m)

CAPACITY

Customary

1 cup (c) = 8 fluid ounces (fl oz)

1 pint (pt) = 2 cups (c)

1 quart (qt) = 2 pints (pt)

1 gallon (gal) = 4 quarts (qt)

Metric

1 liter (L) = 1,000 milliliters (mL)

WEIGHT AND MASS

Customary

1 pound (lb) = 16 ounces (oz)

Metric

1 kilogram (kg) = 1,000 grams (g)

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TIME

1 minute (min) = 60 seconds (sec) 1 week = 7 days

1 hour (hr) = 60 minutes (min) 1 year = 12 months

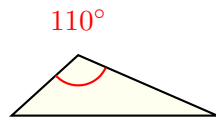
1 day = 24 hours (hr) 1 year = 52 weeks



- 1) A composite bookcase base is made from two non-overlapping rectangular prisms. Prism A is 8 centimeters long, 2 centimeters wide, and 5 centimeters tall. Prism B is 3 centimeters long, 3 centimeters wide, and 3 centimeters tall. What is the total volume?

- A. 107 cubic centimeters C. 27 cubic centimeters
 B. 80 cubic centimeters D. 123 cubic centimeters

- 2) Look at the triangle below. What type of angle is marked?



- A. Acute angle C. Obtuse angle
 B. Right angle D. Straight angle
- 3) A store sells pencils at 3 for \$1 and erasers at \$2 each. Which expression shows the cost of 12 pencils and 5 erasers?

- A. $12 \times 3 + 5 \times 2$ C. $12 + 3 + 5 + 2$
 B. $(12 \div 3) + (5 \times 2)$ D. $(12 + 5) \times (3 + 2)$

- 4) Four swimmers' lap times in seconds: 8.12, 8.21, 8.02, 8.20. Order from fastest to slowest.

- A. 8.02, 8.12, 8.20, 8.21 C. 8.21, 8.20, 8.12, 8.02
 B. 8.02, 8.12, 8.21, 8.20 D. 8.12, 8.02, 8.21, 8.20

- 5) Pattern A: 0, 3, 6, 9, ... Pattern B: 0, 9, 18, 27, ... For the nonzero terms, each B value is how many times the matching A value?

Record your answer in the space provided.



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- 1) How many $\frac{1}{6}$ -hour music lessons can fit into 2 hours?
- A. 6 lessons C. 10 lessons
 B. 8 lessons D. 12 lessons
- 2) A rectangular prism has dimensions 8 feet, 6 feet, and 5 feet. Which measurement below is its volume?
- A. 200 ft³ C. 260 ft³
 B. 240 ft³ D. 280 ft³
- 3) The model shows 1 whole cut into pieces of size $\frac{1}{4}$. How many pieces of size $\frac{1}{4}$ are there in all?

1 whole 

1 whole cut into pieces of size $\frac{1}{4}$

- A. 4 C. 1
 B. 5 D. 8
- 4) How many times larger is 10^5 than 10^2 ?
- A. 10 times C. 1000 times
 B. 100 times D. 10000 times
- 5) A piece of fabric is $\frac{7}{8}$ yard long. You use $\frac{2}{3}$ of it for a project. How much fabric do you use?
- A. $\frac{7}{12}$ yard C. $\frac{5}{8}$ yard
 B. $\frac{9}{11}$ yard D. 1 yard



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1) Three-addend total: $1.23 + 2.45 + 0.89 = ?$

A. 4.47

C. 4.67

B. 5.57

D. 4.57

2) Carlos says 3 pounds = 48 ounces. Is Carlos correct?

A. He is correct

C. 3 pounds = 32 ounces

B. He divided instead of multiplied

D. 3 pounds = 64 ounces

3) Evaluate: $50 \div (2 \times 5)$

A. 5

C. 25

B. 10

D. 125

4) A water tank holds 250 liters. It currently has 165.5 liters. How many more liters are needed to fill the tank completely?

A. 74.5 liters

C. 84.5 liters

B. 94.5 liters

D. 104.5 liters

5) A place-value chart shows a mystery number. Use the chart to identify it.

Ones	Tenths	Hundredths	Thousandths
9	4	2	8

Express this in expanded form.

A. $9 + 4 + 2 + 8$

C. $90 + 4 + 0.2 + 0.008$

B. $9 + 0.4 + 0.02 + 0.008$

D. $9 + 0.04 + 0.002 + 0.008$



Practice Test Answer Keys

How to use this section:

1. check your answer
2. circle missed questions
3. rework them before reading the explanation

Good correction habits build strong scores.

Testinar.com



Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- Choice A is correct.** **(5.MD.5)** Find each part first: Prism A is $8 \times 2 \times 5 = 80$ cubic centimeters, and Prism B is $3 \times 3 \times 3 = 27$ cubic centimeters. Because the parts do not overlap, add them: $80 + 27 = 107$ cubic centimeters.
- Choice C is correct.** **(5.G.3)** An obtuse angle measures more than 90° but less than 180° . This angle is 110° .
- Choice B is correct.** **(5.OA.2)** For pencils, every group of 3 costs \$1, so 12 pencils cost $12 \div 3$ dollars. The erasers cost 5×2 dollars, so add those two costs.
- Choice A is correct.** **(5.NBT.7)** Fastest = smallest time. $8.02 < 8.12 < 8.20 = 8.20 < 8.21$ (note: $8.20 = 8.2$, but $8.21 \neq 8.20$).
- The correct answer is 3.** **(5.G.2)** For nonzero terms, $9 \div 3 = 3$, $18 \div 6 = 3$, and $27 \div 9 = 3$.
- Choice B is correct.** **(5.NBT.2)** Divide pennies by 100 to convert to dollars: $8,400 \div 100 = 84$. So Carla has \$84.
- Choice A is correct.** **(5.NF.1)** $10 - 6 = 4$ and $\frac{8}{10} - \frac{4}{10} = \frac{4}{10} = \frac{2}{5}$. Simplified: $4\frac{2}{5}$.
- Choice B is correct.** **(5.OA.3)** Compare matching figures: $2 = 2 \times 1$, $8 = 2 \times 4$, $14 = 2 \times 7$, and $20 = 2 \times 10$. Pattern B has twice as many dots as Pattern A.
- Choice C is correct.** **(5.OA.2)** Addition is associative, so changing the grouping does not change the total. Both expressions add the same three numbers.
- Choice B is correct.** **(5.MD.1)** 1 meter = 100 centimeters. Divide: $300 \div 100 = 3$ m.
- The correct answer is $9\frac{3}{5}$.** **(5.NF.5)** $\frac{4}{5} \times 12 = \frac{48}{5} = 9\frac{3}{5}$. Since $\frac{4}{5} < 1$, the product is a little less than 12.
- Choice C is correct.** **(5.NBT.6)** $2,576 \div 46 = 56$ cases. Check: $46 \times 56 = 2,576$.
- Choice C is correct.** **(5.NBT.5)** Use partial products: $362 \times 20 = 7,240$ and $362 \times 4 = 1,448$. Add them: $7,240 + 1,448 = 8,688$.
- Choice A is correct.** **(5.MD.6)** Base area = $4 \times 9 = 36$ m². $V = 36 \times 5 = 180$ m³.
- Choice D is correct.** **(5.G.4)** All three angles (50° , 60° , 70°) are less than 90 degrees, making this an acute triangle.
- Choice C is correct.** **(5.NF.6)** The strip starts with one eighth, then shares that small amount into 3 parts. So the matching division equation is $\frac{1}{8} \div 3 = ?$.
- Choice C is correct.** **(5.NF.2)** $\frac{4}{9} + \frac{2}{9} = \frac{6}{9} = \frac{2}{3}$ of the shelf.
- Choice A is correct.** **(5.NF.1)** LCM(3,4,6) = 12. $\frac{1}{3} = \frac{4}{12}$, $\frac{1}{4} = \frac{3}{12}$, $\frac{1}{6} = \frac{2}{12}$. $\frac{4}{12} + \frac{3}{12} + \frac{2}{12} = \frac{9}{12} = \frac{3}{4}$.
- Choice A is correct.** **(5.NBT.2)** A: $0.5 \times 100 = 50$. B: $0.5 \times 10 = 5$. C: $0.05 \times 100 = 5$. D: $50 \times 0.1 = 5$. The largest value is 50.
- Choice A is correct.** **(5.NF.7)** $4 \div \frac{1}{4} = 4 \times 4 = 16$. Multiply the whole number by the denominator.
- Choices A, B, D are correct.** **(5.NBT.7)** Line up decimal points and add. A gives 0.80, B gives 4.00, and D gives 4.00. C should be 1.10.
- Choice B is correct.** **(5.MD.6)** Volume = $10 \times 8 \times 4 = 80 \times 4 = 320$ in³.
- Choice B is correct.** **(5.NF.4)** Simplify $\frac{6}{8} = \frac{3}{4}$. Then $\frac{3}{4} \times \frac{4}{9} = \frac{12}{36} = \frac{1}{3}$.
- Choice C is correct.** **(5.MD.2)** Number of sections: $72 \div 8 = 9$. Posts needed: $9 + 1 = 10$ (one at each end and one at each division between sections).
- Choice C is correct.** **(5.G.1)** The ordered pair (4, 3) has first coordinate 4, so it is 4 units right of the origin. Its second coordinate is greater than 0, so it is above the x-axis.
- The correct answer is $\frac{2}{3}$.** **(5.NF.2)** Divide both by 6 (the GCF): $\frac{12 \div 6}{18 \div 6} = \frac{2}{3}$.
- Choice C is correct.** **(5.NBT.2)** $3 \times 10^3 = 3 \times 1000 = 3000$, so $n = 3$.
- Choice B is correct.** **(5.G.4)** A parallelogram has both pairs of opposite sides parallel. Its opposite sides are also equal in length.
- Choice A is correct.** **(5.NBT.2)** The basic fact is $3 \times 4 = 12$. The factors 300 and 400 have four zeros total, making 120,000, which has 4 trailing zeros.
- Choice D is correct.** **(5.NF.2)** $\frac{7}{8} \approx 1$ and $\frac{3}{9} = \frac{1}{3} \approx \frac{1}{2}$. So $\frac{7}{8} - \frac{3}{9} \approx 1 - \frac{1}{2} = \frac{1}{2}$.



From Your Math Family

Dear Member of the Math Family,

◇ Welcome to a special note from your math family. You finished 4 full practice tests, and that hard work matters more than any single score. We see you. We're proud of you. ◇

★ **What our math family knows:** math is a journey, not a one-time event. You've taken many steps already. The test is just one stop on a much longer path. Every skill you've built is yours forever. ★

What Your Math Family Sees

- **Effort:** STRONG! You showed up again and again.
- **Growth:** REAL! You can solve problems today you couldn't before.
- **Courage:** BRIGHT! You faced hard problems with brave thinking.
- **Future:** BIG! Your math journey is just beginning.

Family tip: on test day, picture us standing behind you, smiling and rooting for you. You're not alone. Your math family is with you. Now go show what you've learned.

If you'd like to share your experience or have questions, please email me at reza@testinar.com. I'd love to hear from you!

Reza Nazari & Jay Daie

Your Math Family (Always With You)

4 COMPLETE TESTS. CONFIDENCE. SUCCESS.



Give your child the practice and confidence they need to excel in **Grade 5 Math**. This book includes **4 full-length** practice tests designed to build skills, improve test readiness, and help students reach their full potential.

WHAT'S INSIDE:



4 COMPLETE PRACTICE TESTS

Full-length tests that reflect real test format and rigor.



COVERS ALL GRADE 5 TOPICS

Numbers & Operations, Fractions, Decimals, Geometry, Measurement, Data & Probability, and more.



MIXED REVIEW & WORD PROBLEMS

Build problem-solving skills with mixed review questions and real-world word problems.



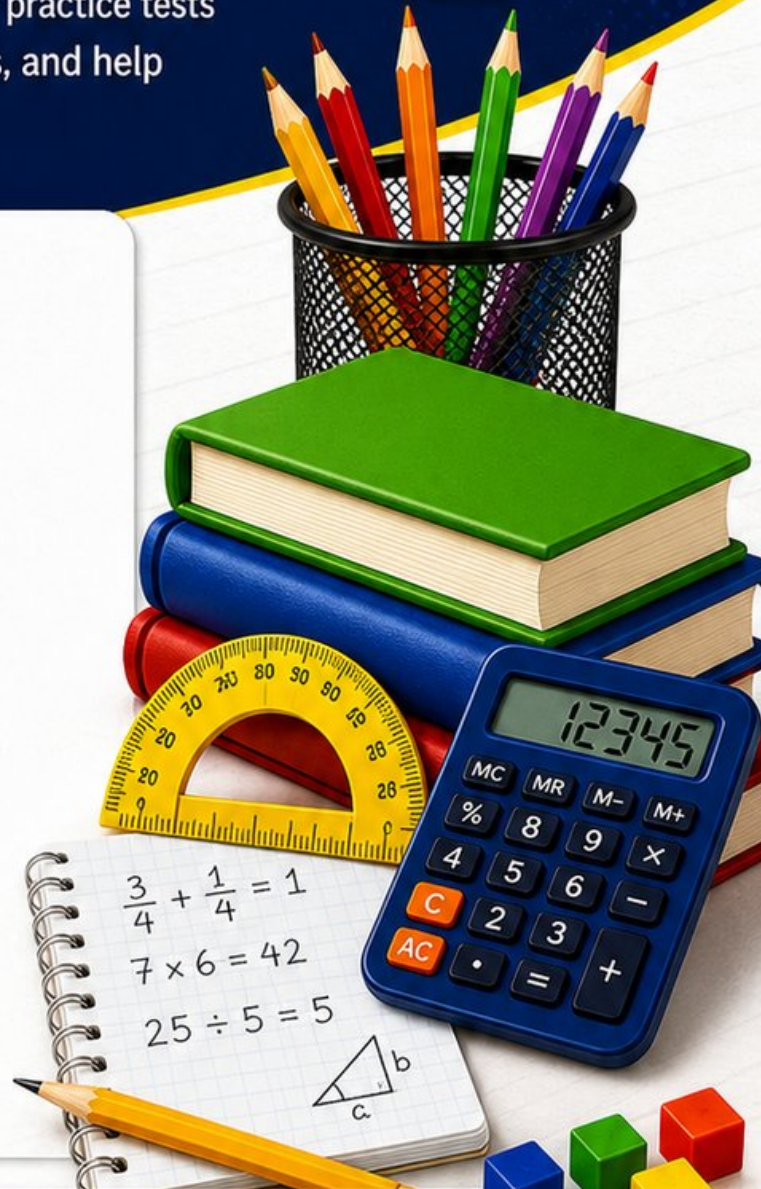
DETAILED ANSWER KEY

Step-by-step explanations for every question to help students learn and improve.



BUILD CONFIDENCE & IMPROVE SCORES

Practice consistently, reduce test anxiety, and achieve your best score!



PRACTICE SMART. LEARN MORE. ACHIEVE YOUR BEST.



Strengthen
Math Skills



Improve
Accuracy
& Speed



Master
Essential
Concepts



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on Test Day



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