

# 10 COMPLETE

# Alaska

# AK STAR

# GRADE 5

# MATH

# PRACTICE TESTS

Standards-Based Review with  
Mixed Practice and Detailed Answer Key



### 10 Complete Practice Tests

Build confidence and test readiness



### Standards-Based Review

Covers key Grade 5 math standards



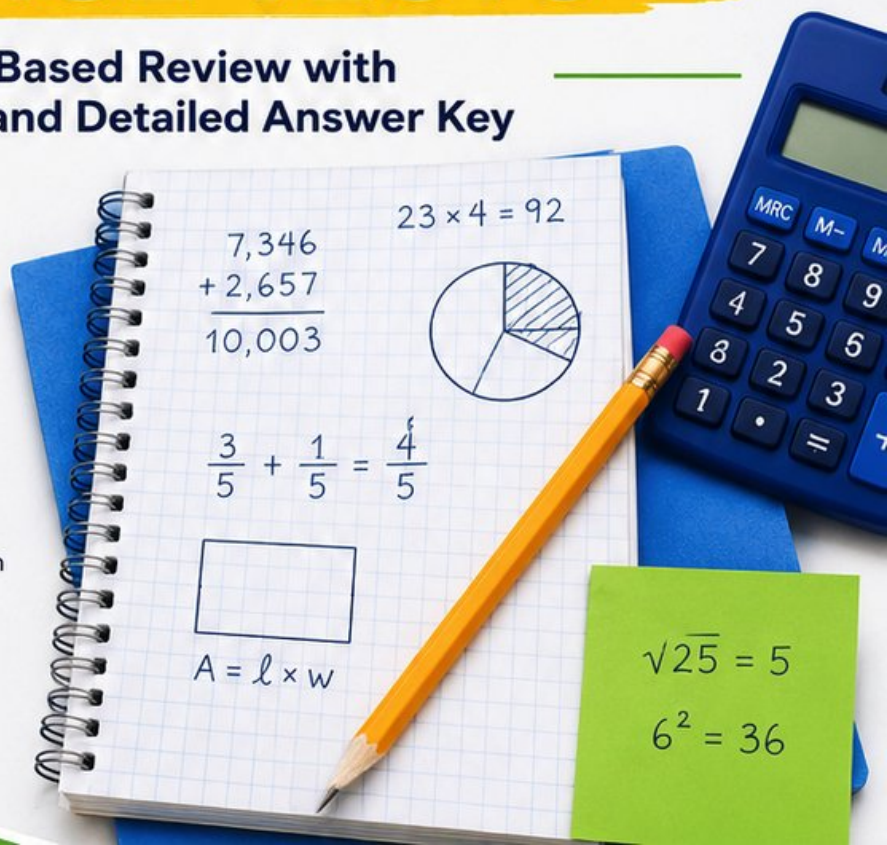
### Mixed Practice

Variety of question types to strengthen skills



### Detailed Answer Key

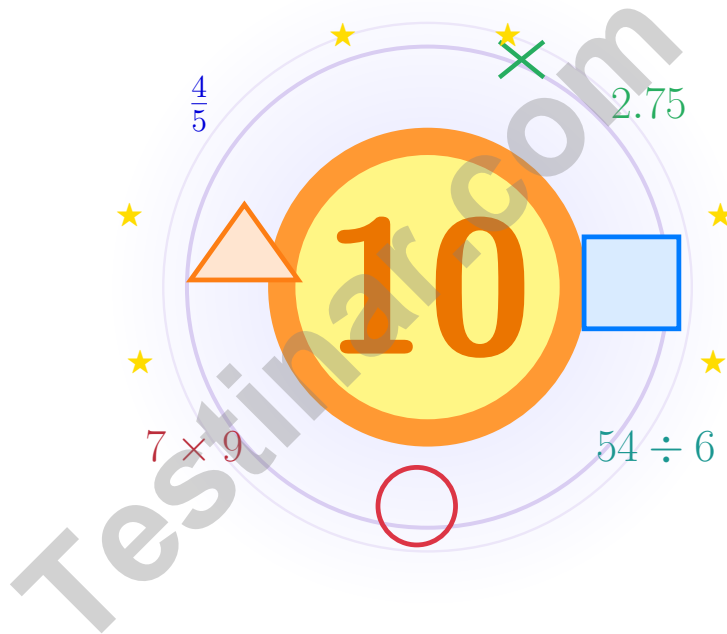
Step-by-step explanations for every question



**PREPARE.  
PRACTICE.  
SUCCEED!**

# 10 Alaska AK STAR Grade 5 Math Practice Tests

*Bright review, thoughtful practice, and steady confidence for Grade 5*



Ten full tests, a focused quick review, and student-friendly support that keeps practice clear and encouraging.

**Jay Daie and Reza Nazari**



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# Welcome!

This book is a place to practice bravely and think clearly

## Dear Grade 5 Mathematician

This book gives you ten chances to read carefully, solve thoughtfully, and build steady math confidence. Some problems will feel friendly right away. Some will take more patience. Both kinds help you grow.

The goal is not to feel perfect before you begin. The goal is to practice honest effort, learn from corrections, and notice how much stronger your thinking becomes over time.

### Read

Slow down and understand the task.

### Solve

Show clear steps and good choices.

### Learn

Use mistakes as clues for what comes next.

**A strong habit from the start:** keep your work neat, estimate when it helps, write units carefully, and do not let one hard problem decide your mood for the whole page.



Scan me

# How to Use This Book

A simple routine that turns practice into real progress

## Step 1

**Warm up with the quick review.**

Spend a few minutes refreshing the ideas before the test begins.

## Step 2

**Take one full practice test.**

Work in a calm spot and aim for careful thinking before speed.

## Step 3

**Check your work honestly.**

Circle missed questions and notice which skills need another look.

## Step 4

**Fix and reflect.**

Read the explanation, repair the work, and bring that lesson into the next test.



**A Good 10-Week Rhythm**

<b>Week 1</b>	Take Test 1 and notice your starting strengths.
<b>Week 2</b>	Take Test 2 and slow down on word problems.
<b>Week 3</b>	Take Test 3 and sharpen multiplication and division checks.
<b>Week 4</b>	Take Test 4 and focus on fractions and decimals.
<b>Week 5</b>	Take Test 5 and watch your labels and units closely.
<b>Week 6</b>	Take Test 6 and practice calmer pacing.
<b>Week 7</b>	Take Test 7 and compare your habits with the earlier weeks.
<b>Week 8</b>	Take Test 8 and focus on tidy, checkable work.
<b>Week 9</b>	Take Test 9 and compare your progress with the way you worked in the earlier weeks.
<b>Week 10</b>	Take Test 10 and finish with steady, confident effort while using every strong habit you built.



# Table of Contents

★ Practice Test 1	_____	20
★ Practice Test 2	_____	34
★ Practice Test 3	_____	50
★ Practice Test 4	_____	65
★ Practice Test 5	_____	81
★ Practice Test 6	_____	96
★ Practice Test 7	_____	110
★ Practice Test 8	_____	123
★ Practice Test 9	_____	136
★ Practice Test 10	_____	150
<b>Practice Test Answer Keys</b>	_____	<b>167</b>
<b>Practice Test Answers and Explanations</b>	_____	<b>173</b>

## 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)

1 gram (g) = 1,000 milligrams (mg)

### 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) What is  $\frac{1}{6} \times \frac{1}{2}$  in simplest form?
- A.  $\frac{1}{8}$   C.  $\frac{2}{8}$   
 B.  $\frac{1}{12}$   D.  $\frac{1}{3}$
- 2) Which expression correctly shows how to find  $\frac{1}{6}$  divided by 4?
- A.  $\frac{1}{6} \times 4$   C.  $\frac{1}{6} + 4$   
 B.  $\frac{1}{6} \times \frac{1}{4}$   D.  $4 \div \frac{1}{6}$
- 3) Which sum is not written in simplest form? (Error Analysis)
- A.  $2\frac{1}{3} + 1\frac{1}{3} = 3\frac{2}{3}$   C.  $3\frac{3}{5} + 1\frac{2}{5} = 4\frac{5}{5}$   
 B.  $1\frac{1}{2} + 2\frac{1}{2} = 4$   D.  $2\frac{3}{8} + 1\frac{5}{8} = 4$
- 4) A class is divided into groups. If  $\frac{1}{6}$  of 30 students go to Group A, how many is that?
- A. 5 students  C. 15 students  
 B. 6 students  D. 20 students
- 5) Watering can had  $\frac{7}{10}$  gallon. After use,  $\frac{1}{2}$  gallon spent. How much is left in simplest form?
- A.  $\frac{1}{5}$  gallon  C.  $\frac{6}{10}$  gallon  
 B.  $\frac{1}{10}$  gallon  D.  $\frac{3}{10}$  gallon
- 6) Three students painted a wall. One painted  $\frac{1}{5}$ , another painted  $\frac{1}{3}$ , and the third painted  $\frac{1}{15}$ . What fraction was painted in total?
- A.  $\frac{3}{23}$   C.  $\frac{9}{15}$  or  $\frac{3}{5}$   
 B.  $\frac{3}{15}$   D. 1 whole



- 7) A prism has base area  $24 \text{ m}^2$  and height 5 m. What is the volume?

Record your answer in the space provided.

- 8) A box contains 2 pounds of clay. Each small project uses  $\frac{1}{4}$  pound of clay. How many small projects can be made?

- A. 6 projects                       C. 8 projects  
 B. 16 projects                     D. 24 projects


- 9) Find:  $1,200 \div 10^2$ .

Record your answer in the space provided.

- 10) The diagram shows three bars representing expressions. Without calculating, rank them from smallest to largest.

  $(16 + 9)$

  $2 \times (16 + 9)$

  $(16 + 9) \div 2$

- A.  $(16 + 9) < 2 \times (16 + 9) < (16 + 9) \div 2$      C.  $2 \times (16 + 9) < (16 + 9) < (16 + 9) \div 2$   
 B.  $(16 + 9) \div 2 < (16 + 9) < 2 \times (16 + 9)$      D.  $(16 + 9) \div 2 < 2 \times (16 + 9) < (16 + 9)$



## Grade 5 Mathematics Reference Materials

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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) Add:  $3\frac{5}{12} + 1\frac{7}{12}$

A.  $4\frac{1}{12}$

B.  $4\frac{7}{12}$

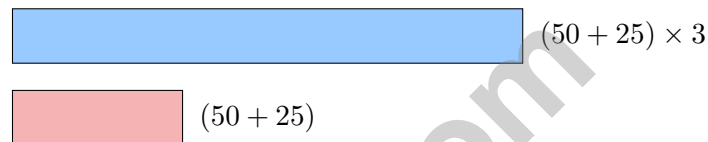
C. 5

D.  $5\frac{1}{12}$

2) Which statement is true about a right triangle?

 A. It has all angles less than  $90^\circ$  B. It has exactly one angle of  $90^\circ$  C. It has two angles of  $90^\circ$  D. It has no angles of  $90^\circ$ 

3) The diagram shows the comparison. Which statement is correct?

 A. Bottom is triple the top B. Top is half the bottom C. They are equal D. Top is 3 times the bottom4) Two friends are cutting rope. One piece is  $\frac{3}{5}$  meter and the other is  $\frac{1}{4}$  meter. What is the total length?

A.  $\frac{4}{9}$  meter

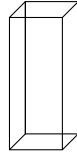
B.  $\frac{17}{20}$  meter

C.  $\frac{3}{20}$  meter

D. 1 meter



37) A refrigerator is 2 feet wide, 3 feet deep, and 5 feet tall. What is its volume?



$$2 \times 3 \times 5 \text{ ft}$$

- A. 10 cubic feet                       C. 25 cubic feet  
 B. 15 cubic feet                       D. 30 cubic feet
- 38) A school has 15 boxes of science supplies. Each kit uses  $\frac{1}{6}$  of a box. How many kits can be made?
- A. 70 kits                                   C. 90 kits  
 B. 80 kits                                   D. 100 kits
- 39) Which number divided by 100 equals 0.45?
- A. 4.5                                         C. 450  
 B. 4,500                                     D. 45
- 40) A step-shaped solid is decomposed into three non-overlapping rectangular prisms. The prisms measure 10 feet by 5 feet by 3 feet, 8 feet by 4 feet by 3 feet, and 7 feet by 4 feet by 3 feet. What is the total volume?
- A. 246 cubic feet                       C. 180 cubic feet  
 B. 330 cubic feet                       D. 234 cubic feet

## End of Practice Test

Nice work. Pause, breathe, and check your answers with care.



Grade 5 Mathematics

10

Questions: 40 Duration: No time limit

Calculator Policy: Calculators are not allowed



## 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.**

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## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(5.NF.4)**  $\frac{1}{6} \times \frac{1}{2} = \frac{1}{12}$  (unit-fraction product).
- 2) **Choice B is correct.** **(5.NF.7)** Dividing by a whole number means multiplying by its reciprocal:  $\frac{1}{6} \div 4 = \frac{1}{6} \times \frac{1}{4} = \frac{1}{24}$ .
- 3) **Choice C is correct.** **(5.NF.1)**  $4\frac{5}{5}$  equals 5, so it is not in simplest form. The sum should be written as 5.
- 4) **Choice A is correct.** **(5.NF.4)**  $\frac{1}{6} \times 30 = \frac{30}{6} = 5$  students.
- 5) **Choice A is correct.** **(5.NF.2)**  $\frac{7}{10} - \frac{5}{10} = \frac{2}{10}$ , which simplifies to  $\frac{1}{5}$  gallon.
- 6) **Choice C is correct.** **(5.NF.1)**  $\text{LCM}(5,3,15) = 15$ .  $\frac{1}{5} = \frac{3}{15}$ ,  $\frac{1}{3} = \frac{5}{15}$ ,  $\frac{1}{15} = \frac{1}{15}$ . Sum =  $\frac{3}{15} + \frac{5}{15} + \frac{1}{15} = \frac{9}{15} = \frac{3}{5}$  of the wall.
- 7) **The correct answer is 120 m<sup>3</sup>.** **(5.MD.6)** Multiply the base area by the height:  $24 \times 5 = 120 \text{ m}^3$ .
- 8) **Choice C is correct.** **(5.NF.6)** Ask, "How many fourths are in 2?" Since  $2 \div \frac{1}{4} = 2 \times 4 = 8$ , there is enough clay for 8 projects.
- 9) **The correct answer is 12.** **(5.NBT.2)** Dividing by 100 removes two zeros:  $1,200 \rightarrow 12$ .
- 10) **Choice B is correct.** **(5.OA.2)** The shortest bar is half the sum, the middle bar is the sum itself, and the longest bar is double the sum. That gives the order in choice B.
- 11) **Choice C is correct.** **(5.G.4)** A triangle is a polygon, but it has 3 sides rather than 4 sides.
- 12) **Choice D is correct.** **(5.MD.5)**  $V = \text{base area} \times \text{height} = 10 \times 6 = 60$  cubic units.
- 13) **Choice A is correct.** **(5.NBT.7)** Multiply as if the numbers were whole numbers:  $36 \times 24 = 864$ . The factors 3.6 and 2.4 have a total of  $1 + 1 = 2$  decimal places, so place the decimal point two places from the right:  $864 \rightarrow 8.64$ . Therefore,  $3.6 \times 2.4 = 8.64$ .
- 14) **Choice B is correct.** **(5.NF.4)**  $2\frac{1}{4} = \frac{9}{4}$  and  $1\frac{1}{5} = \frac{6}{5}$ . Multiply:  $\frac{9}{4} \times \frac{6}{5} = \frac{54}{20} = 2\frac{14}{20} = 2\frac{7}{10}$  cups.
- 15) **Choice B is correct.** **(5.OA.2)** The tape diagram shows 3 equal parts, and each part is 8. That is  $3 \times 8$ , for a total of 24.
- 16) **Choice D is correct.** **(5.NBT.7)** Add:  $\$12.34 + \$15.67 = \$28.01$ ; then  $\$28.01 + \$18.92 = \$46.93$ .
- 17) **Choice B is correct.** **(5.NBT.2)** The nonzero parts make  $5 \times 2 = 10$ , which adds one zero of its own. Together with the two factor zeros, the product is 1,000 with 3 zeros.
- 18) **Choice C is correct.** **(5.MD.3)** The greatest distance is 7 feet and the least is 2 feet. Range =  $7 - 2 = 5$  feet.
- 19) **Choices A, B are correct.** **(5.NBT.3)** 0.407 is four hundred seven thousandths, which is  $\frac{407}{1000}$ . C and D equal 0.47.
- 20) **Choice D is correct.** **(5.NF.7)**  $12 \div \frac{1}{2} = 12 \times 2 = 24$ .
- 21) **Choice D is correct.** **(5.NF.2)** Multiply both the numerator and the denominator of  $\frac{3}{5}$  by 2:  $\frac{3 \times 2}{5 \times 2} = \frac{6}{10}$ . So  $\frac{3}{5}$  and  $\frac{6}{10}$  are equivalent.
- 22) **Choice C is correct.** **(5.MD.3)** Lowest:  $15^\circ\text{C}$  (1 mark), Highest:  $24^\circ\text{C}$  (4 marks). Difference:  $24 - 15 = 9^\circ\text{C}$ .
- 23) **Choice D is correct.** **(5.MD.7)** The overlap has 8 squares (shown as  $\frac{2}{6} \times \frac{4}{8}$ ) out of 48 total, so the product is  $\frac{8}{48}$ .
- 24) **Choice A is correct.** **(5.OA.3)** Pattern H is twice Pattern G:  $3 \times 2 = 6$ ,  $6 \times 2 = 12$ ,  $9 \times 2 = 18$ ,  $12 \times 2 = 24$ ,  $15 \times 2 = 30$ .
- 25) **Choice B is correct.** **(5.G.4)** When all three angles in a triangle are less than 90 degrees, the triangle is called acute.
- 26) **The correct answer is 3645.** **(5.NBT.5)**  $135 \times 7 = 945$  and  $135 \times 20 = 2,700$ . Sum:  $945 + 2,700 = 3,645$ .
- 27) **Choice D is correct.** **(5.MD.1)** Since 1 pint = 2 cups, divide 8 by 2:  $8 \div 2 = 4$  pints.
- 28) **Choice D is correct.** **(5.NF.6)** The total length is 2, and each jump is one third. So the matching equation is  $2 \div \frac{1}{3} = n$ .
- 29) **The correct answer is 72 cubic feet.** **(5.MD.7)** The garden bed is a rectangular prism, so multiply the three dimensions:  $9 \times 4 \times 2 = 72$  cubic feet.
- 30) **Choice B is correct.** **(5.NF.1)** Subtract the whole numbers and fractions:  $4\frac{5}{7} - 1\frac{2}{3} = 3 + (\frac{15}{21} - \frac{14}{21}) = 3\frac{1}{21}$ .
- 31) **Choice D is correct.** **(5.OA.3)** Pattern A adds 1 each time and Pattern B adds 3 each time. The next matching values are 5 and 15, so the next ordered pair is (5, 15).



### Trail Guide's Final Briefing

#### Brave Trail-Walker,

◇ You've walked all 10 miles of the practice trail. You've seen smooth paths, steep climbs, narrow passes, and clearings. Every step taught you something about yourself and your math skills. ◇

★ **What trail guides know:** the most important thing is to keep moving. Slow steps still get you where you need to go. You've practiced that exact pace, and now your stride is steady. ★

#### Trail Survey Report

- **Route Knowledge:** STRONG! You recognize different types of math problems.
- **Pacing:** STEADY! You don't rush, and you don't drag.
- **Pack Loaded:** READY! You have all the strategies you need.
- **Trail Confidence:** HIGH! You trust your training.

**Guide's tip:** on test day, stay on the trail you've walked before. Use the strategies you've practiced. Trust the route you know. The summit is just one steady walk away.

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

**Reza Nazari & Jay Daie**

Your Math Trail Guide (Keep Walking)

# PRACTICE TODAY. MASTER TOMORROW.

Give your child the confidence to excel in **Grade 5 Math!**  
This book includes **10 complete practice tests** designed to build strong skills, improve test readiness, and achieve success.



**10**  
COMPLETE  
PRACTICE  
TESTS

- ✓ Realistic. Rigorous.
- ✓ Results-Driven.

More practice today for a **stronger** tomorrow.

## THIS BOOK HELPS YOUR CHILD:



### Build Confidence

Familiar, focused practice reduces anxiety and boosts self-belief.



### Strengthen Skills

Reinforces key math concepts through high-quality, standards-aligned questions.



### Improve Test Readiness

Full-length tests help students understand test format, pacing, and question types.



### Track Progress

Identify strengths and target areas with purposeful practice.



### Achieve Success

Better preparation leads to higher scores and bright futures.

## COVERS ALL ESSENTIAL TOPICS

- ✓ Whole Numbers & Operations
- ✓ Fractions & Decimals
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- ✓ Measurement & Data
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- ✓ Ratio & Proportion
- ✓ Perimeter, Area & Volume
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