

# 7

# Alaska

# AK STAR

## GRADE 5

# MATHEMATICS

## PRACTICE TESTS

✓  
PRACTICE  
PREPARE  
SUCCEED

★★★

Comprehensive Standards-Aligned  
Review for Strong Grade 5  
Math Performance



$$\frac{3}{4} + \frac{2}{4} = \frac{5}{4}$$

$$2.4 + 1.6 = 4.0$$

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



**7 FULL-LENGTH  
PRACTICE TESTS**

Realistic style  
questions



**STANDARDS-  
ALIGNED**

Covers all Grade 5  
standards



**BUILD CONFIDENCE**

Target weak areas  
and improve  
performance



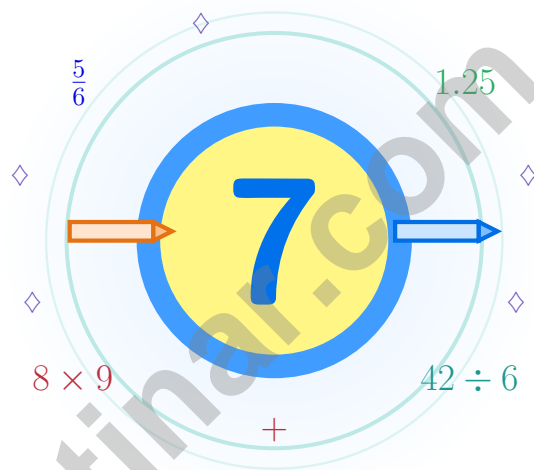
**ACHIEVE SUCCESS**

Develop skills,  
stay prepared,  
excel on test day

★ PRACTICE TODAY. PERFORM TOMORROW. **SUCCEED** FOREVER. ★

# 7 Alaska AK STAR Grade 5 Math Practice Tests

*This book is here to help you practice, reflect, and rise across seven tests*



Seven full tests, a concise review, and helpful support that turns Grade 5 practice in The Last Frontier into steady, confident growth from page one to the final check.

**Jay Daie and Reza Nazari**



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# Alaska, Your Seven-Test Trail Begins

Seven full tests woven into one calm, steady practice path

## Dear Alaska Math Trail Crew

This practice book is your steady companion for seven tests, not a place to be perfect. 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.

Use these seven tests like stepping-stones. Take one test at a time, check your answers honestly, and notice which skills need more attention. Small improvements add up across seven rounds.

### See

See the question fully  
before you start the  
math.

### Plan

Pick a strategy that fits  
the numbers in front of  
you.

### Build

Build the answer step  
by step, no shortcuts.

**A strong habit for Alaska mathematicians:** read carefully, estimate when it helps, show your steps, and keep going even when a question feels tricky. That is how steady math confidence is built.

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# Your Seven-Step Trail Plan

A simple routine that turns practice into progress

## Step 1: Set Up

**Pencil ready, distractions gone.**

Spend a few minutes waking up your memory before the test begins.

## Step 2: Work the Test

**Take a full test like the real day.**

Work in a calm spot and focus on careful thinking before speed.

## Step 3: Look Back

**Walk through your answers without rushing.**

Circle missed questions and notice which topics keep showing up.

## Step 4: Climb Higher

**Pick one or two skills to sharpen next.**

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

## A Good 7-Week Alaska Rhythm

<b>Week 1</b>	Take Test 1 and notice your strongest starting skills along the trail.
<b>Week 2</b>	Take Test 2 and slow down on word problems and tricky directions.
<b>Week 3</b>	Take Test 3 and sharpen fraction and decimal work.
<b>Week 4</b>	Take Test 4 and pay close attention to labels and units.
<b>Week 5</b>	Take Test 5 and compare your habits with your first test.
<b>Week 6</b>	Take Test 6 and practice staying calm during tricky questions.
<b>Week 7</b>	Take Test 7 and finish the trail with steady, confident work.



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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)

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) Subtract:  $10 - 3\frac{2}{7}$ .

A.  $6\frac{5}{7}$

B.  $6\frac{4}{7}$

C.  $7\frac{1}{7}$

D.  $7\frac{5}{7}$

2) Compare:  $(20 + 30) \times 7$    $20 \times 7 + 30 \times 7$

A.  $>$

B.  $<$

C.  $=$

 D. Cannot tell

3) A solid is made of 5 unit cubes stacked in a line. What is its volume in cubic units?

*Record your answer in the space provided.*

4) Rewrite  $\frac{2}{3}$  and  $\frac{3}{5}$  with a common denominator.

Original	New Fraction
$\frac{2}{3}$	$\frac{?}{15}$
$\frac{3}{5}$	$\frac{?}{15}$

A.  $\frac{10}{15}$  and  $\frac{9}{15}$

B.  $\frac{6}{15}$  and  $\frac{9}{15}$

C.  $\frac{5}{15}$  and  $\frac{10}{15}$

D.  $\frac{8}{15}$  and  $\frac{7}{15}$

5) Add:  $3.45 + 1.39 = ?$

A. 4.83

B. 4.84

C. 4.85

D. 4.86





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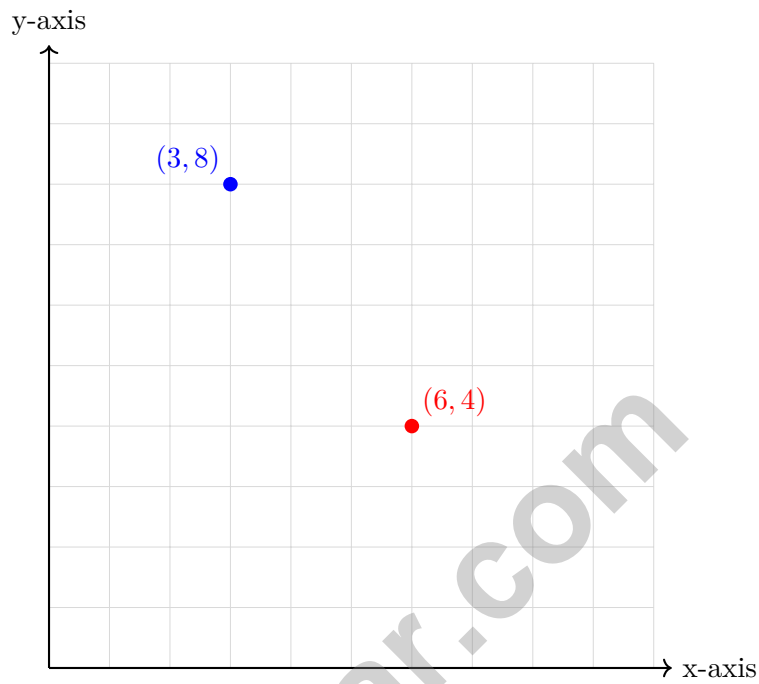
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1) Which point is farther up from the x-axis:  $(6, 4)$  or  $(3, 8)$ ?



- A.  $(6, 4)$  is farther up
- B.  $(3, 8)$  is farther up
- C. They are the same height
- D. Cannot be determined



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1) Find the missing multiplier:  $? \times 400 = 360,000$

A. 900

C. 9,000

B. 90

D. 9

2) Which equals  $73 \times 100$ ?

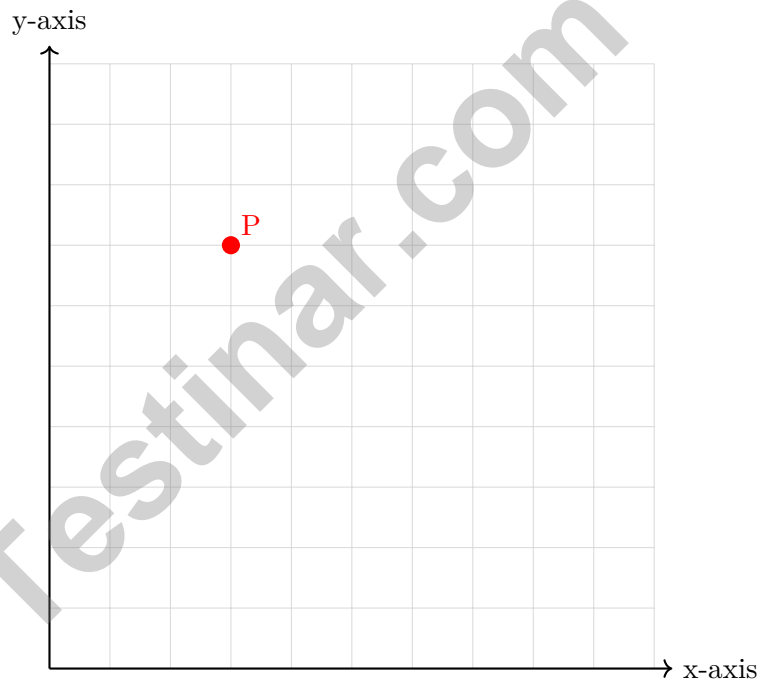
A.  $73 \times 10 \times 10$

C.  $73 + 100$

B.  $73 \times 10 + 10$

D.  $730 - 100$

3) What ordered pair represents the location of the point marked on the grid?



A. (7, 3)

C. (3, 3)

B. (7, 7)

D. (3, 7)



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1) A rectangular prism has volume  $168 \text{ cm}^3$ , height 8 cm, and width 3 cm. Find the length.

- A. 5 cm                                       C. 7 cm  
 B. 6 cm                                       D. 8 cm

2) Place-value chart: identify the digit in the hundredths place for 5.726.

Ones	Tenths	Hundredths	Thousandths
5	7	2	6

- A. 5     C. 2  
 B. 7     D. 6
- 3) Which ordered pair fits the rule “add 7 to the input”?
- A. (5, 35)                                       C. (7, 5)  
 B. (5, 12)                                       D. (2, 8)

4) Evaluate:  $(8 + 2) \times (5 - 1) \div 5$

- A. 4     C. 8  
 B. 6     D. 10



## 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 A is correct.** **(5.NF.1)** Write  $10 = 9\frac{7}{7}$ . Then  $9\frac{7}{7} - 3\frac{2}{7} = 6\frac{5}{7}$ .
- 2) **Choice C is correct.** **(5.OA.2)** The distributive property says multiplying the whole sum by 7 is the same as multiplying each addend by 7 and adding the products.
- 3) **The correct answer is 5.** **(5.MD.5)** Each unit cube takes up 1 cubic unit of space. A line of 5 unit cubes therefore has volume 5 cubic units.
- 4) **Choice A is correct.** **(5.NF.2)**  $\frac{2}{3} = \frac{2 \times 5}{3 \times 5} = \frac{10}{15}$  and  $\frac{3}{5} = \frac{3 \times 3}{5 \times 3} = \frac{9}{15}$ .
- 5) **Choice B is correct.** **(5.NBT.7)** Hundredths:  $5 + 9 = 14$ , so write 4 and regroup 1 tenth. Tenths:  $4 + 3 + 1 = 8$ . Ones:  $3 + 1 = 4$ . The sum is 4.84.
- 6) **Choice D is correct.** **(5.G.4)** The two sides with tick marks are equal, making this an isosceles triangle.
- 7) **Choice C is correct.** **(5.NF.1)**  $\text{LCM}(2,3) = 6$ .  $\frac{1}{2} = \frac{3}{6}$  and  $\frac{1}{3} = \frac{2}{6}$ .  $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$ .
- 8) **Choice B is correct.** **(5.G.4)** Rectangles and rhombuses still have two pairs of parallel sides, so they are parallelograms. Each branch adds an extra property to the larger group.
- 9) **Choice C is correct.** **(5.G.4)** A square has four right angles and four equal sides, so it is both a rectangle and a rhombus.
- 10) **Choice B is correct.** **(5.NF.6)**  $\frac{1}{5} \times \frac{5}{6} = \frac{5}{30}$ , which simplifies to  $\frac{1}{6}$  liter.
- 11) **The correct answer is 0.7.** **(5.NBT.4)** Hundredths digit is 4, less than 5, so the tenths digit stays at 7: 0.7.
- 12) **Choice B is correct.** **(5.MD.1)** 1 km = 1,000 m. Divide:  $1500 \div 1000 = 1.5$  km.
- 13) **Choice A is correct.** **(5.NBT.7)**  $9.30 - 3.45 = 5.85$ . The arrow starts at 9.30 and lands at 5.85.
- 14) **The correct answer is  $\frac{1}{16}$ .** **(5.NF.6)** Half of one eighth is one sixteenth, so each piece is  $\frac{1}{16}$  of the whole.
- 15) **Choice C is correct.** **(5.NF.2)**  $\frac{1}{2} + \frac{1}{2} = 1$ . Two equal halves make one whole.
- 16) **Choice A is correct.** **(5.OA.2)** The grouped part  $(3 + 2)$  equals 5. Multiplying by 4 means there are 4 groups of that 5-unit amount.
- 17) **Choice A is correct.** **(5.MD.2)** First find the change in height:  $115 - 100 = 15$  cm. Since 100 cm equals 1 meter, 15 cm equals 0.15 meters.
- 18) **Choices A, B are correct.** **(5.NBT.2)**  $45 \times 100 = 4500$  and  $450 \times 10 = 4500$ . C equals 45,000, and D equals 450.
- 19) **Choice A is correct.** **(5.NBT.3)**  $1 + \frac{3}{10} + \frac{6}{100} = 1 + 0.3 + 0.06 = 1.36$ . The digit 1 is in the ones place, 3 in tenths, 6 in hundredths.
- 20) **Choice A is correct.** **(5.MD.3)** Count the X marks above each height. The height  $2\frac{1}{4}$  cm has only 1 mark, so it is the least common.
- 21) **Choice C is correct.** **(5.NF.6)** Count fifths in 4 meters:  $4 \div \frac{1}{5} = 4 \times 5 = 20$  pieces.
- 22) **Choice A is correct.** **(5.NBT.2)** A is correct. B equals 0.054, C is wrong, and D equals 0.054.
- 23) **Choice A is correct.** **(5.OA.1)** Multiply first:  $4 \times 5 = 20$ . Then move left to right through the subtraction and addition:  $100 - 20 + 2 = 82$ .
- 24) **Choice A is correct.** **(5.NF.7)**  $\frac{1}{3} \div 6 = \frac{1}{3} \times \frac{1}{6} = \frac{1}{18}$ .
- 25) **Choice B is correct.** **(5.NBT.5)** Multiply:  $47 \times 12 = 47 \times (10 + 2) = (47 \times 10) + (47 \times 2) = 470 + 94 = 564$  popsicles.
- 26) **Choice A is correct.** **(5.MD.1)** Burgers cost:  $4 \times 8.75 = 35.00$  dollars. Fries cost:  $4 \times 2.50 = 10.00$  dollars. Subtotal:  $35.00 + 10.00 = 45.00$  dollars.
- 27) **Choice C is correct.** **(5.OA.1)** The parentheses make  $7 - 2 = 5$ . Then multiply before adding:  $3 \times 5 = 15$ , so the expression becomes  $15 + 15 = 30$ .
- 28) **The correct answer is  $\frac{5}{9}$ .** **(5.NF.5)** Multiplying by 1 does not change the value, so  $1 \times \frac{5}{9} = \frac{5}{9}$ .
- 29) **Choice A is correct.** **(5.NF.1)** Rewrite  $1\frac{2}{3}$  as  $1\frac{4}{6}$ . Then  $1\frac{5}{6} + 1\frac{4}{6} = 2 + \frac{9}{6} = 2 + 1\frac{1}{2} = 3\frac{1}{2}$ .
- 30) **Choice C is correct.** **(5.NF.4)** The multiplicative identity is 1: any number times 1 equals that number.
- 31) **Choice B is correct.** **(5.NBT.6)**  $1,620 \div 27 = 60$  books per box. Check:  $27 \times 60 = 1,620$ .



**Dear Student,**

★ Geometry is about seeing and reasoning. Seven tests helped you practice angles, shapes, and measurement. That means you can look at a figure and understand what it is telling you. ★

◇ **Smart tip:** draw and label. When you sketch a shape, mark the sides, write the units, and label the important numbers. That makes your thinking clearer. ◇

**Geometry Tools**

- **Label:** write units and side lengths.
- **Use formulas:** area, perimeter, and volume.
- **Check reasonableness:** does the size make sense?
- **Draw:** a quick sketch helps every time.

**You are prepared** to reason carefully on test day. Keep that calm, clear thinking.

Email me at [reza@testinar.com](mailto:reza@testinar.com).

**Reza Nazari & Jay Daie**

Your Math Coaches (Think and Label)

Testinar.com

# PRACTICE TODAY. PERFORM TOMORROW.

Success in math starts with practice! This book provides the **practice, confidence, and skills** your child needs to excel on the Grade 5 Math test and beyond.

## KEY BENEFITS:



### TARGETED PRACTICE

Focus on the most important Grade 5 math skills.



### STANDARD-ALIGNED

All tests align with state standards for Grade 5.



### BUILD CONFIDENCE

Strengthen skills, reduce test anxiety, and boost confidence.



### IMPROVE PERFORMANCE

Timed practice helps improve speed and accuracy.



### ACHIEVE SUCCESS

Develop strong test-taking skills and achieve your best score!

## PERFECT FOR:

✓ Classroom Practice

✓ Homework Help

✓ Test Preparation

✓ Summer Learning

✓ On-the-Go Practice

✓  
PRACTICE  
PREPARE  
SUCCEED



## STRONG SKILLS. BRIGHT FUTURE.

Give your child the tools they need to succeed in math and in life!



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