

4 Alaska AK STAR

GRADE
6
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

4

**PRINTED
TESTS**



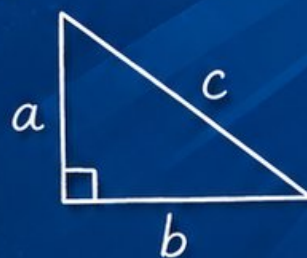
2

**ONLINE
TESTS**



- ✓ Build Confidence
- ✓ Master Key Math Skills
- ✓ Answer Explanations for Every Question
- ✓ Test-Taking Strategies That Work

$$2x + 5 = 21$$
$$x = 8$$



$$\frac{3}{4} + \frac{1}{2} = \frac{5}{4}$$



**USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS**

**FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.**

4 Alaska AK STAR Grade 6 Math Practice Tests

Standards-Aligned Calm Explorer Thinking for Alaska System of Academic Readiness



Four complete 40-question Grade 6 practice rounds for AK STAR, built for calm explorer thinking with ratios, rational numbers, expressions, equations, geometry, statistics, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Alaska Math Explorer!

Four focused rounds using calm explorer thinking

This book gives you four full Grade 6 practice tests for AK STAR. Each round uses glacier paths, northern lights, and wide-open trails as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

Your Alaska Practice Promise

Move from clue to clue like a marked route: notice the question, choose the tool, and verify the answer.

Read

Plan

Check

How to Use This Book

A four-session routine for calm explorer thinking

1. **Work in order.** Take one 40-question test at a time in a quiet place.
2. **Preview the skills.** Scan the quick review pages before beginning the first round.
3. **Correct actively.** Retry missed items before reading the full explanation.
4. **Mark confidence.** Put a small star beside problems where your plan felt strong.
5. **Plan the next round.** Use the growth log to choose one habit and one skill to practice.

Alaska review rhythm: Work one round, review the trail of mistakes, and return with a sharper map for the next test.



What Is Inside?

Four AK STAR tests, 160 questions, and a full review path

Part	What You Will Practice
Tests 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–4	Skill-building and final stamina rounds with expressions, equations, geometry, data, and problem models.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Calm explorer thinking means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



Scan me!
For more practice
& answers

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1) What is the mean of the data set: 3, 5, 7, 9, 11?

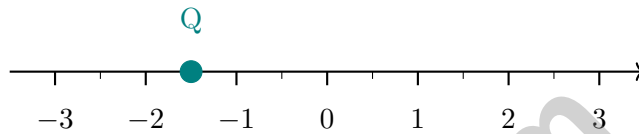
A. 5

C. 9

B. 11

D. 7

2) The number line below has tick marks at halves. Which fraction is located at point Q?



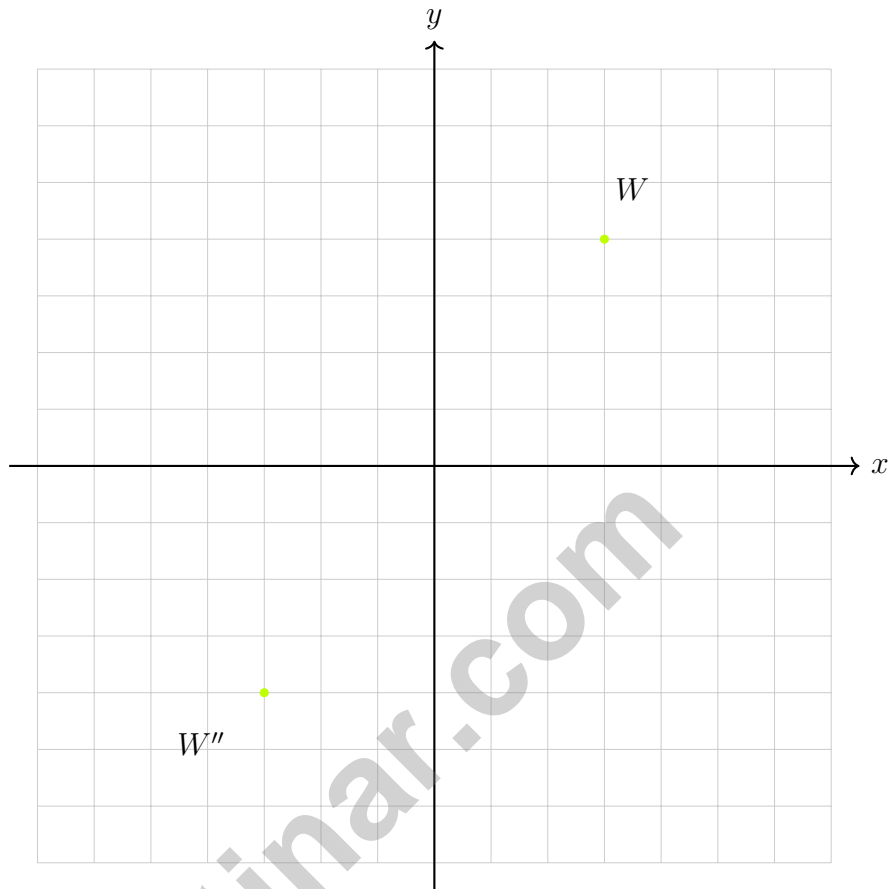
A. -2

C. -1

B. $-\frac{1}{2}$

D. $-1\frac{1}{2}$





3)

If point W is at $(3, 4)$ and point W'' is at $(-3, -4)$, what transformation(s) would move W to W'' ?

- A. Reflection across the x -axis only
- B. Reflection across the y -axis only
- C. Reflection across both axes
- D. Reflection across the origin



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4) A rectangle has vertices at $(1, 1)$, $(5, 1)$, $(5, 4)$, and $(1, 4)$. What is the perimeter of this rectangle?

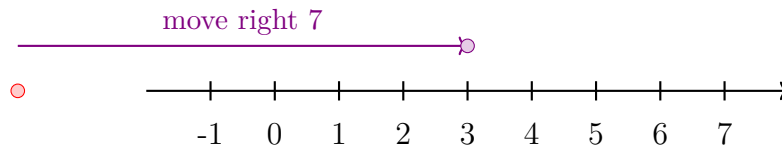
A. 14 units

B. 16 units

C. 18 units

D. 20 units

5) What is $-4 - (-7)$?



A. -11

B. -3

C. 3

D. 11

6) Compute: $(-10) \times 3$

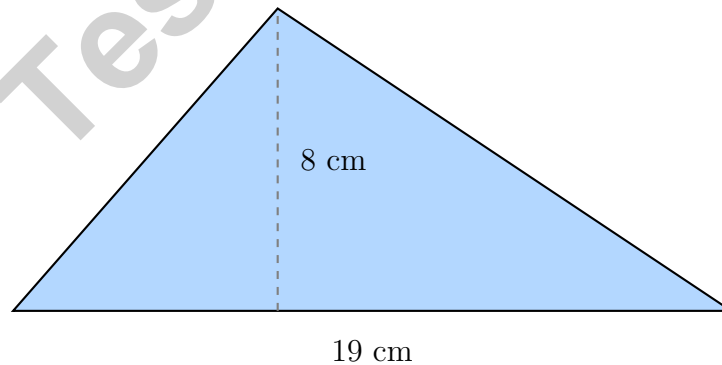
A. 30

B. -7

C. 7

D. -30

7) An acute triangle has a base of 19 centimeters and a height of 8 centimeters. What is its area?



A. 27 cm^2

B. 38 cm^2

C. 76 cm^2

D. 152 cm^2



- 1) A craft store sells beads in bulk. The table shows the relationship between number of beads and cost:

Number of Beads	Cost (\$)
100	2.50
200	5.00
?	7.50

- A. 250 C. 350
 B. 300 D. 400
- 2) A survey asks: “How many hours did you spend reading last week?”
What is the population for this question?
- A. All the people whose reading time is being studied C. Books in the library
 B. Hours of the day D. The number 7
- 3) A dot plot shows book counts that are symmetric around 12 books. Which is true?
- A. The mean is much less than the median. C. The mean and median are approximately equal.
 B. The mean is much greater than the median. D. The mode cannot be determined.
- 4) A box contains 40 pens: 15 blue, 12 red, 8 green, and 5 black. If one pen is drawn at random, what is the probability it is red?
- A. $\frac{1}{4}$ C. $\frac{1}{3}$
 B. $\frac{3}{10}$ D. $\frac{3}{5}$

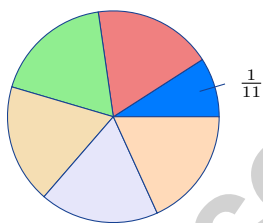


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- 5) A data set of hourly temperatures is displayed in a stem-and-leaf plot. If we remove all data points from stem 8, which statistic would definitely change?

Stem	Leaf
7	2, 5, 8
8	1, 4, 6, 9
9	0, 3

- A. The mode
 B. The mean
 C. The range
 D. The minimum



6)

A movie theater has 550 patrons. The circle graph shows $\frac{1}{11}$ bought popcorn. How many bought popcorn?

- A. 50
 B. 40
 C. 60
 D. 70

- 7) A class conducted a survey on favorite ice cream flavors: vanilla (18 students), chocolate (22 students), strawberry (12 students), mint (8 students). Which data display would BEST show the relative popularity of each flavor as a proportion of the total?

- A. Double-bar graph
 B. Circle graph
 C. Histogram
 D. Line plot



1) Which equation is equivalent to $x + 6 = 13$?

A. $x = 13 - 6$

C. $x = 13$

B. $x = 7$

D. $x = 13 + 6$

Partial Quotients: $5,472 \div 24$

$$24 \times 200 = 4,800 \Rightarrow 5,472 - 4,800 = 672$$

$$24 \times 20 = 480 \Rightarrow 672 - 480 = 192$$

$$24 \times 8 = 192 \Rightarrow 192 - 192 = 0$$

Quotient: $200 + 20 + 8 = \mathbf{228}$

2)

What is $5,472 \div 24$ using partial quotients?

A. 226

C. 230

B. 232

D. 228

3) A car rental company charges \$25 per day. What is the cost for 4 days?

4) A pencil is 0.15 meters long. A pen is 0.08 meters long. How much longer is the pencil?

A. 0.07 meters

C. 0.07 cm

B. 0.23 meters

D. 1.87 meters



5) Factor $8 + 12$ using the GCF.

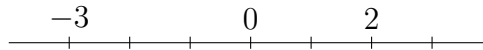
A. $2(4 + 6)$

B. $4(2 + 3)$

C. $3(2.67 + 4)$

D. $8(1 + 1.5)$

6) Which number line correctly shows three points: -3 , 0 , and 2 ?



Based on the number line, which statement is true?

A. $-3 > 2$

B. $0 < -3$

C. $-3 < 0 < 2$

D. $2 < 0$

7) Which of these is the distance between $(-7, -3)$ and $(-7, 4)$?

 A. 7 units B. 11 units C. 1 unit D. 4 units

8) A student plotted two points on a number line. The distance between them is 13 units. One point is at -4 . Which could be the other point to the left of -4 ?

A. -17

B. -9

C. 9

D. 17

9) What is $(-2) \times (-3) \times (-5)$?

A. -30

B. 30

C. 10

D. -10



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& answers

Alaska AK STAR Practice Test Answer Keys

How to use this Alaska AK STAR answer section with a Grade 6 student:

1. check the answer first, then write one quick reason the choice is correct
2. mark questions to try again, especially the skills that feel connected to calm explorer thinking
3. rework the problem before reading the full explanation, using this reminder:
Move from clue to clue like a marked route: notice the question, choose the tool, and verify the answer.

A calm Alaska correction routine turns every missed item into useful practice. Work one round, review the trail of mistakes, and return with a sharper map for the next test.



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Alaska Practice Test Answers and Explanations

Review the four printed AK STAR tests with careful, observant, and ready for a bigger trail habits.

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** **(6.SP.2)** Sum = $3 + 5 + 7 + 9 + 11 = 35$. Mean = $35 \div 5 = 7$.
- 2) **Choice D is correct.** **(6.SP.4)** Point Q is located at the half-tick between -2 and -1 , which is $-1\frac{1}{2}$.
- 3) **Choice C is correct.** **(6.NS.8)** To go from $(3, 4)$ to $(-3, -4)$, both the x -coordinate sign and y -coordinate sign must change. This requires reflection across both the x -axis and y -axis.
- 4) **Choice A is correct.** **(6.NS.8)** Length is $|5 - 1| = 4$ units and width is $|4 - 1| = 3$ units. The perimeter is $2(4 + 3) = 14$ units.
- 5) **Choice C is correct.** **(6.EE.1)** $-4 - (-7) = -4 + 7 = 3$. Subtracting a negative is the same as adding its opposite.
- 6) **Choice D is correct.** **(6.NS.3)** Negative times positive is negative: $(-10) \times 3 = -30$.
- 7) **Choice C is correct.** **(6.G.1)** $A = \frac{1}{2} \times 19 \times 8 = 76 \text{ cm}^2$.
- 8) **Choice B is correct.** **(6.G.1)** Using $72 = \frac{1}{2}(15 + 9) \times h = 12h$, so $h = 6$ cm.
- 9) **The correct answer is 15%.** **(6.RP.3)** Percent discount is $\frac{30}{200} = 0.15 = 15\%$.
- 10) **Choice D is correct.** **(6.NS.1)** $V = 12 \times 8 \times 5 = 96 \times 5 = 480 \text{ cm}^3$.
- 11) **Choice D is correct.** **(6.G.3)** The shape has four sides with opposite sides parallel and all angles at 90 degrees. It is a rectangle but not a square since length \neq width.
- 12) **Choice A is correct.** **(6.G.1)** Rectangle: base $10 - 2 = 8$, height $5 - 1 = 4$, area = 32 square units. Triangle: base $12 - 10 = 2$, height $5 - 1 = 4$, area = 4 square units. Total = $32 + 4 = 36$ square units.
- 13) **The correct answer is 9.** **(6.RP.3)** Ratio 5 : 3 with 15 red marbles: each part is $15 \div 5 = 3$ marbles. Blue marbles: $3 \times 3 = 9$.
- 14) **Choice D is correct.** **(6.EE.9)** For $y = 6x$: when $x = 4$, $y = 6(4) = 24$, not 25. The point should be $(4, 24)$.
- 15) **Choice B is correct.** **(6.NS.4)** $100 = 4 \times 25 = (2 \times 2) \times (5 \times 5) = 2^2 \times 5^2$. Options A, C, and D use composite numbers.
- 16) **The correct answer is 1.8.** **(6.RP.3)** Divide: $180 \text{ cm} \div 100 \text{ cm/meter} = 1.8$ meters.
- 17) **Choice B is correct.** **(6.NS.7)** Positive numbers are greater than negative numbers. Among positives: $0.6 > 0.1$. Among negatives: $-\frac{3}{4} = -0.75 > -2$.
- 18) **Choice B is correct.** **(6.G.5)** The circumference formula is $C = 2\pi r$. This relates the perimeter to the radius. Choice C is area; choice A is incorrect.
- 19) **Choice C is correct.** **(6.SP.2)** Ordered: 5, 10, 15, 20, 25. The actual median (middle value) is 15. The student's answer was right by accident but reasoning was flawed.
- 20) **The correct answer is The unit rate is 25 items per hour, and the y-value when x = 1 is 25.** **(6.RP.3)** A is correct because $50 \div 2 = 25$ items per hour. D is correct because when $x = 1$, $y = 25$. Choice B is false for a proportional relationship, Choice C should be $y = 25x$, and Choice E is false.
- 21) **Choice A is correct.** **(6.EE.9)** Total expenses: $\$1200 + \$500 = \$1700$. Remaining: $\$2000 - \$1700 = \$300$.
- 22) **Choice C is correct.** **(6.RP.3)** Actual dimensions: $7 \times 3 = 21$ m and $4 \times 3 = 12$ m. Area = $21 \times 12 = 252$ sq m.
- 23) **Choice A is correct.** **(6.NS.1)** The correct approach: flip $\frac{1}{4}$ to get $\frac{4}{1}$, then multiply $\frac{2}{3} \times \frac{4}{1} = \frac{8}{3} = 2\frac{2}{3}$. The student multiplied by $\frac{1}{4}$ without inverting it.
- 24) **Choice C is correct.** **(6.NS.2)** $3,672 \div 18 = 204$. Check by multiplying: $18 \times 204 = 18 \times 200 + 18 \times 4 = 3,600 + 72 = 3,672$.
- 25) **Choice D is correct.** **(6.NS.3)** Check each: $3.1 + 3.1 = 6.2$, $3.1 \times 2 = 6.2$, and $12.4 \div 2 = 6.2$. All are correct.
- 26) **Choice A is correct.** **(6.NS.4)** Distributive property: $8(6 + 2) = 8 \cdot 6 + 8 \cdot 2 = 48 + 16 = 64$. Choice A shows the expanded form.
- 27) **Choice A is correct.** **(6.NS.5)** To order integers from least to greatest, place the most negative number first, then move toward zero and positive numbers. The order is $-4 < -1 < 0 < 2$.



Author's Note

From a Friend Who Believes in You

Hi, Friend!

◇ I just want to say something important: I am proud of you. You did 4 full practice tests. That takes time, hard work, and heart. ◇

★ **Friendly truth:** a test is just one part of your math journey. You are SO much more than a score. The work you did is the real win! ★

What I Want You to Know

- **You are smart.** Every test you finished proves it.
- **You are brave.** You tried hard problems.
- **You are growing.** Mistakes taught you new things.
- **You are ready.** The skills are inside you.

One more thing: on test day, take a deep breath. Smile. Remember that someone (me!) believes in you. You can do this!

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

Jay Daie

Your Math Friend

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 4 full-length Math practice tests and 2 online tests to help Grade 6 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.

THIS BOOK INCLUDES:

4 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answer Explanations

 **MORE PRACTICE.
GREATER RESULTS.**

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN



Stronger Math Skills

Build a solid foundation through targeted practice and review.



Better Problem Solving

Develop logical thinking and effective solution strategies.



Deeper Understanding

Reinforce key concepts with clear explanations and meaningful practice.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

- ✓ Ratios & Rates
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Fractions & Decimals
- ✓ Percents
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ And More!



2 ONLINE TESTS

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AND LEARNING RESOURCES



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