

8

FULL-LENGTH

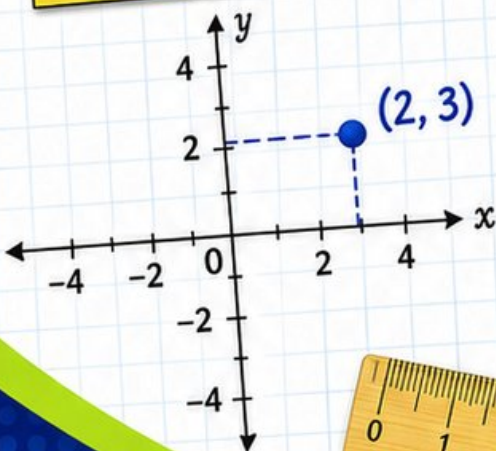
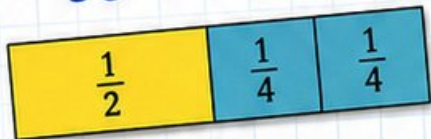
Alaska AK STAR

GRADE 5

MATH PRACTICE TESTS

Mixed Practice Questions with Answer Key
for Students, Parents, and Teachers

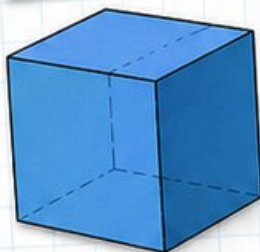
$$36 \div 4 = 9$$



$$2.4 \times 7 = 16.8$$

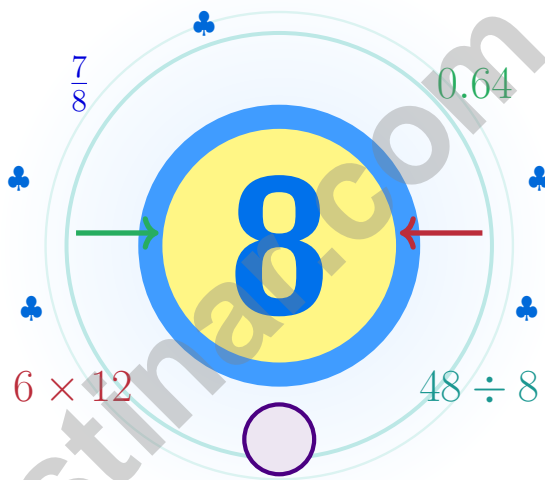
$$7 \times (12 - 5) = 49$$

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



8 Alaska AK STAR Grade 5 Math Practice Tests

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



Eight full tests, a focused quick 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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Open the Trail, Alaska

Seven practice tests woven into one calm routine

Welcome Letter for Alaska Math Trail Crew

This practice book is your steady companion for eight 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 eight 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.

Read

Read every word twice and underline what is asked.

Solve

Choose the cleanest method and show your steps.

Reflect

Look back to find what worked and what to fix.

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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A Map of the Pages

A simple routine that turns practice into progress

Step 1: Power Up

Sharpen your math brain with the quick review.

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

Step 2: Trail Run

Take a full practice test in a quiet spot.

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

Step 3: Debrief

Score honestly and circle missed questions.

Circle missed questions and notice which topics keep showing up.

Step 4: Repair

Fix the missed work and lock the lesson in.

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



Table of Contents

★ Practice Test 1	_____	21
★ Practice Test 2	_____	35
★ Practice Test 3	_____	50
★ Practice Test 4	_____	64
★ Practice Test 5	_____	80
★ Practice Test 6	_____	94
★ Practice Test 7	_____	109
★ Practice Test 8	_____	125
Practice Test Answer Keys	_____	140
Practice Test Answers and Explanations	_____	145

Grade 5 Mathematics Reference Materials

PERIMETER AND AREA

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

Area of Rectangle $A = l \times w$

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LENGTH

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

1 yard (yd) = 3 feet (ft)

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Metric

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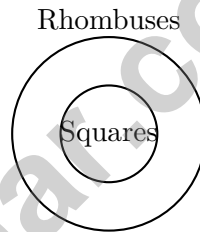


Characteristic	Best Fit
1) Four sides, two pairs of parallel sides, all sides equal	
Four sides, two pairs of parallel sides, not all sides equal	
Four sides, exactly 1 pair of parallel sides	

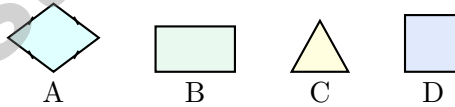
Complete the table. Which shape fills the first blank?

- A. Parallelogram or Rhombus C. Rectangle only
 B. Rhombus or Square D. Trapezoid only

2) The Venn diagram has an outer circle for rhombuses and an inner circle for squares. Which figure belongs in the rhombus circle but outside the square circle?



The figures below are labeled A-D.



- A. Figure A C. Figure C
 B. Figure B D. Figure D

3) A science measurement is 19.455 cm. Which shows correct rounding to nearest tenth?

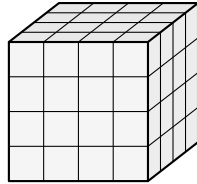
- A. 19.455 → 19.4 C. 19.455 → 19.45
 B. 19.455 → 19.5 D. 19.455 → 20



4) A rectangular drawer measures 5 inches long, 5 inches wide, and 8 inches tall. What is its volume?

- A. 25 cubic inches C. 40 cubic inches
 B. 200 cubic inches D. 18 cubic inches

5) To build a cube with 64 unit cubes, how many unit cubes will be along each edge?



- A. 2 units C. 6 units
 B. 4 units D. 8 units

6) Storage container: length 15 cm, width 10 cm, height 8 cm. Volume =?

- A. 1200 cm^3 C. 120 cm^3
 B. 33 cm^3 D. 150 cm^3

7) Pattern Epsilon is 1, 3, 5, 7. Pattern Zeta is 4, 12, 20, 28. Which statement describes how each Zeta value is related to the matching Epsilon value?

- A. Multiply Epsilon by 8. D. Multiply Epsilon by 8, then subtract 4.
 B. Multiply Epsilon by 4.
 C. Add 3 to Epsilon.



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1) To add $\frac{1}{8}$ and $\frac{3}{12}$, what common denominator should you use?

A. 12

C. 96

B. 24

D. 8

2) Evaluate: $48 \div 6 + 3 \times 2$

A. 14

C. 22

B. 12

D. 16

3) The model shows $\frac{1}{5}$ of a whole split into 2 equal parts. What fraction of the whole is each small part?

$\frac{1}{5}$ split into 2



1 whole split into 5 equal parts

A. $\frac{1}{5}$

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

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

D. $\frac{1}{10}$

4) A music store receives 3,135 CDs shipped in cartons of 45 CDs. How many complete cartons are there, and how many CDs remain?

A. 72 cartons, 25 CDs

C. 71 cartons, 15 CDs

B. 70 cartons, 0 CDs

D. 69 cartons, 30 CDs

5) Multiply: $\frac{2}{5} \times \frac{2}{3}$

A. $\frac{4}{8}$

C. $\frac{4}{15}$

B. $\frac{5}{8}$

D. $\frac{2}{3}$



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1) Compare: 4×10^3 vs. 40×10^2 . Which is true?

- A. 4×10^3 is larger
 B. 40×10^2 is larger
 C. They are equal
 D. First is 10 times larger

2) Expanded form using multiplication by powers of 10: $2 \times 1 + 3 \times \frac{1}{10} + 7 \times \frac{1}{100}$ equals which decimal?

- A. 2.37
 B. 2.73
 C. 237
 D. 0.237

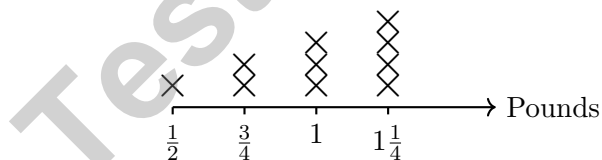
3) A baker made 12.345 kg of dough. Break this number into its place values.

- A. $1 + 2 + 0.3 + 0.04 + 0.005$
 B. $12 + 0.3 + 0.04 + 0.005$
 C. $10 + 2 + 0.3 + 0.4 + 0.5$
 D. $12 + 3 + 4 + 5$

4) Prism: length 18 cm, width 7 cm, volume 630 cm^3 . Height =?

- A. 126 cm
 B. 25 cm
 C. 612 cm
 D. 5 cm

5) The line plot shows the weight of trail mix bags, in pounds:



How many pounds of trail mix are shown in all?

- A. 9 pounds
 B. 10 pounds
 C. $10\frac{1}{2}$ pounds
 D. 11 pounds



Grade 5 Mathematics Reference Materials

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1) Without calculating, is $1,205 \times (3 + 2)$ greater than, less than, or equal to $5 \times (3 + 2)$?

A. Cannot tell

B. Less than

C. Equal to

D. Greater than

2) Add: $\frac{7}{12} + \frac{1}{8}$

A. $\frac{8}{20}$

B. $\frac{17}{24}$

C. $\frac{8}{12}$

D. $\frac{15}{24}$

3) Which decimal is equivalent to $\frac{7}{10}$?

A. 0.7

B. 0.07

C. 7

D. 0.007

4) What is the y-coordinate of (0, 7)?

Record your answer in the space provided.

5) A store sells fabric ribbon at \$0.60 per meter. How much does 3.5 meters cost?

A. \$1.80

B. \$2.60

C. \$2.40

D. \$2.10

6) A recipe needs $\frac{1}{4}$ cup of oil. You make $\frac{3}{4}$ of the recipe. How much oil do you need?

A. $\frac{3}{16}$ cup

B. $\frac{1}{12}$ cup

C. $\frac{4}{16}$ cup

D. $\frac{2}{4}$ cup



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.G.4)** A shape with two pairs of parallel sides and all sides equal is either a Rhombus (if angles are not 90°) or a Square (if all angles are 90°).
- 2) **Choice A is correct.** **(5.G.4)** The matching tick marks show Figure A has four equal sides. It has no right-angle marks, so it is a rhombus but not a square.
- 3) **Choice B is correct.** **(5.NBT.4)** The tenths digit is 4. The hundredths digit is 5. Since $5 \geq 5$, round tenths up: $4 \rightarrow 5$, giving 19.5 cm.
- 4) **Choice B is correct.** **(5.MD.7)** Use the rectangular-prism volume formula: $5 \times 5 \times 8 = 200$. So the volume is 200 cubic inches.
- 5) **Choice B is correct.** **(5.MD.6)** A cube with 4 cubes along each edge has $4 \times 4 = 16$ cubes in one layer and 4 layers, so it has $16 \times 4 = 64$ unit cubes.
- 6) **Choice A is correct.** **(5.MD.6)** $V = 15 \times 10 \times 8 = 1200 \text{ cm}^3$.
- 7) **Choice B is correct.** **(5.OA.3)** Check the matching terms: $1 \times 4 = 4$, $3 \times 4 = 12$, $5 \times 4 = 20$, and $7 \times 4 = 28$.
- 8) **Choice C is correct.** **(5.G.2)** The next Rule A value is 5 and the next Rule B value is 10, so the next ordered pair is (5, 10).
- 9) **Choice B is correct.** **(5.NF.5)** Both expressions multiply 24 by a fraction. Since $\frac{4}{5} > \frac{2}{3}$, $\frac{4}{5} \times 24$ has the larger value.
- 10) **Choice C is correct.** **(5.NF.2)** $\frac{5}{12} + \frac{4}{12} = \frac{9}{12} = \frac{3}{4}$ of the string.
- 11) **The correct answer is 96 ft³.** **(5.MD.6)** $8 \times 3 \times 4 = 96 \text{ ft}^3$.
- 12) **The correct answer is 165.** **(5.MD.6)** Convert the hours first: 2 hours is $2 \times 60 = 120$ minutes. Add 45 minutes to get $120 + 45 = 165$ minutes.
- 13) **Choice C is correct.** **(5.MD.2)** $2\frac{1}{2} = \frac{5}{2}$ and $4\frac{1}{2} = \frac{9}{2}$. Multiply: $\frac{5}{2} \times \frac{9}{2} = \frac{45}{4} = 11\frac{1}{4}$ square feet.
- 14) **Choice D is correct.** **(5.MD.1)** 1 liter = 1,000 milliliters. Divide: $5000 \div 1000 = 5$ L.
- 15) **Choice D is correct.** **(5.MD.1)** Dividing by a power of 10 shifts the value to a smaller place. $6,300 \div 10 = 630$ items per box. This confirms the answer.
- 16) **Choice B is correct.** **(5.G.2)** The bottom side connects (1, 2) and (5, 2), which are on the same horizontal line. The length is $5 - 1 = 4$ units.
- 17) **Choice B is correct.** **(5.OA.3)** The amount added grows by 1 each time: add 2, then 3, then 4, then 5. Next add 6 to get 21, then add 7 to get 28.
- 18) **Choice B is correct.** **(5.NF.5)** Since $\frac{1}{3} < 1$, multiplying 9 by $\frac{1}{3}$ will give a result smaller than 9. No computation needed!
- 19) **Choices A, B are correct.** **(5.NBT.7)** Align decimals and subtract. A and B are true. C should be 0.70, and D should be 2.97.
- 20) **Choice C is correct.** **(5.MD.1)** Total is 5 miles. Sum of known segments: $1.2 + 1.3 + 1.1 = 3.6$ miles. Final segment: $5 - 3.6 = 1.4$ miles.
- 21) **Choice B is correct.** **(5.NF.2)** The GCF of 12 and 15 is 3. Divide: $\frac{12}{15} = \frac{12 \div 3}{15 \div 3} = \frac{4}{5}$.
- 22) **Choice C is correct.** **(5.NF.2)** $8 \div \frac{1}{2} = 8 \times 2 = 16$.
- 23) **Choice D is correct.** **(5.NF.7)** The blank must make the product end with exactly 2 zeros. $3 \times 200 = 600$, and 600 has exactly 2 zeros.
- 24) **The correct answer is 5.** **(5.OA.2)** The expression $12 + 8$ is one amount. Multiplying it by 5 makes 5 copies of that amount, so the answer is 5.
- 25) **Choice A is correct.** **(5.OA.2)** $\frac{2}{5} \times \frac{5}{6} = \frac{10}{30}$, which simplifies to $\frac{1}{3}$ pound.
- 26) **Choice A is correct.** **(5.NF.1)** Borrow 1 from the 6 wholes: $6\frac{1}{5} = 5\frac{6}{5}$. This is the correct first step.
- 27) **Choice A is correct.** **(5.NF.1)** Add whole parts: $1 + 2 = 3$. Add fractions: $\frac{1}{6} + \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$. Result: $3\frac{1}{2}$.
- 28) **Choice A is correct.** **(5.NBT.7)** Multiply: $23 \times 5 = 115$, then place decimal one place from right: 11.5.
- 29) **Choice C is correct.** **(5.NF.2)** Use a common denominator of 24: $\frac{5}{6} = \frac{20}{24}$ and $\frac{3}{8} = \frac{9}{24}$. Then $\frac{20}{24} - \frac{9}{24} = \frac{11}{24}$ yard.



Math Athlete, Listen Up!

◇ 8 practice tests done. That's serious training. Your math muscles are strong, your endurance is high, and your reflexes (recognizing problem types) are quick. You're in great shape for the big test. ◇

★ **Trainer's wisdom:** muscle memory is real, even in math. The more you do something, the more your brain knows how to do it without thinking. You've built that muscle memory over 8 tests. Now it's automatic. ★

Athlete's Performance Card

- **Endurance:** TOP-TIER! You can finish a long test without burnout.
- **Strength:** STRONG! You handle multi-step problems with power.
- **Speed:** SHARP! You move efficiently from question to question.
- **Recovery:** GREAT! You bounce back fast from tough questions.

Trainer's tip: on test day, hydrate, breathe deeply, and warm up with the easier questions first. Build your rhythm. Your training will carry you the rest of the way.

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 Trainer (You're In Great Shape)

$45 \div 5 = ?$

PRACTICE TODAY.

$\frac{3}{5} + \frac{1}{10} = ?$



ACHIEVE TOMORROW!



$3^2 + 4^2 = 25$

This book includes **8** full-length **Grade 5** math practice tests to help students master essential skills, build confidence, and achieve success. Each test is carefully designed to reflect real math standards and cover a variety of question types with detailed answer explanations.

$7x - 4 = 17$

$1\frac{1}{2} + 2\frac{1}{3} = ?$

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