

8 Vermont VTCAP

GRADE 6

MATH

PRACTICE TESTS

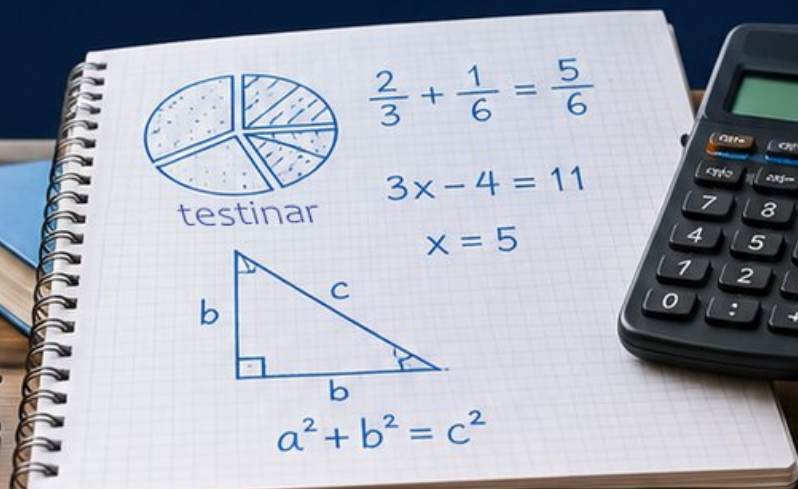
8
PRINTED
TESTS

+

2
ONLINE
TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.

Standards-Aligned *Steady Southern* Problem Solving for Comprehensive Assessment Program



BUILT FOR
ACAP SUCCESS



REALISTIC TESTS
& QUESTION TYPES



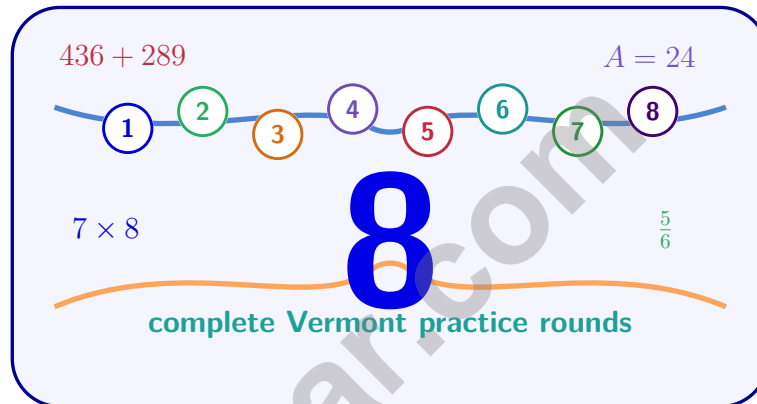
STRENGTHEN
MATH SKILLS



REVIEW, PRACTICE,
AND IMPROVE

8 Vermont VTCAP Grade 6 Math Practice Tests

Standards-Aligned Green-Mountain Precision for Vermont Comprehensive Assessment Program



Eight complete 40-question Grade 6 practice rounds for VTCAP, built for green-mountain precision with ratios, rational numbers, expressions, equations, geometry, statistics, answer keys, and clear explanations for every item.

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Welcome, Vermont Math Explorer!

Eight focused rounds using green-mountain precision

This book gives you eight full Grade 6 practice tests for VTCAP. Each round uses mountain lanes, quiet classrooms, and careful number sense as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

Your Vermont Practice Promise

Keep the solution sturdy: read slowly, organize facts, and check the final answer.

Read

Plan

Check

How to Use This Book

A eight-session routine for green-mountain precision

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

Vermont review rhythm: Use each round like a trail marker, then review what to strengthen before the next test.



What Is Inside?

Eight VTCAP tests, 320 questions, and a full review path

Part	What You Will Practice
Tests 1–3	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 4–6	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Tests 7–8	Final stamina rounds for mixed review, neat work, and flexible strategy choices.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Green-mountain precision means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



Scan me!
For more practice
& answers

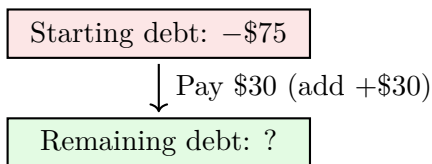
Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	28
★ Practice Test 3	_____	44
★ Practice Test 4	_____	61
★ Practice Test 5	_____	78
★ Practice Test 6	_____	95
★ Practice Test 7	_____	111
★ Practice Test 8	_____	127
Practice Test Answer Keys	_____	143
Practice Test Answers and Explanations	_____	148

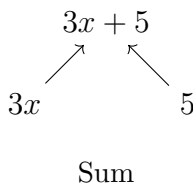
- 1) A family has a monthly income of \$3600. They allocate: 35% to rent, 15% to food, 10% to utilities. How much do they have remaining for other expenses?
- A. \$1080 C. \$1440
 B. \$1260 D. \$1800
- 2) A recipe calls for 3 cups of water for every 1 cup of rice. Which equation describes the relationship between cups of rice (r) and cups of water (w)?
- A. $r = 3w$ C. $r = w + 3$
 B. $w = 3r$ D. $w = r - 3$
- 3) Which formula correctly finds the area of a triangle?
- A. $A = b + h$ C. $A = \frac{1}{2}bh$
 B. $A = 2bh$ D. $A = bh$
- 4) A rectangular prism has length 6 cm, width 5 cm, and height $\frac{4}{5}$ cm. What is its volume?
- A. 12 cm^3 C. 24 cm^3
 B. 18 cm^3 D. 30 cm^3
- 5) A pizza has a diameter of 12 inches. What is its approximate area using $\pi \approx 3.14$?
- A. 37.68 in^2 C. 113.04 in^2
 B. 75.36 in^2 D. 452.16 in^2



- 6) A debt of \$75 is represented as $-\$75$. If the debt is paid down by \$30, what is the remaining debt?



- A. $-\$105$
 C. \$45
 B. $-\$45$
 D. \$105
- 7) Compute: $7 \times (-5)$
- A. -35
 C. -2
 B. 35
 D. 2
- 8) A mountain peak is at elevation 3,600 m. A valley floor is 1,200 m below the peak. What is the elevation of the valley floor?
- A. 4,800 m
 C. $-1,200$ m
 B. 1,200 m
 D. 2,400 m



- 9) This tree represents which phrase?
- A. The product of 3, x , and 5
 C. The sum of $3x$ and 5
 B. Three times the sum of x and 5
 D. Five more than three



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& answers

10) Find the value of $5x - 2x + 3$ when $x = 4$.

A. 11

C. 19

B. 15

D. 25

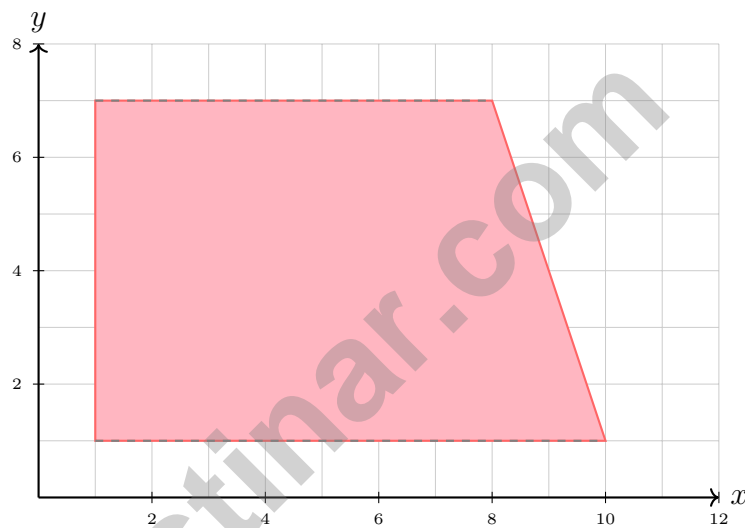
11) Solve for x : $\frac{x}{8} = 2$

A. $x = 4$

C. $x = 16$

B. $x = 10$

D. $x = 0.25$



12)

A trapezoid has vertices at $(1, 1)$, $(10, 1)$, $(8, 7)$, and $(1, 7)$. If the two parallel sides have lengths 9 and 7 units, and the height is 6 units, what is the area?

A. 42 square units

C. 54 square units

B. 48 square units

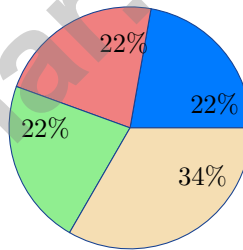
D. 60 square units



1) A student solved $3x = 21$ and wrote $x = 18$. What went wrong?

- A. They added 3 instead of dividing C. The answer is correct
 B. They multiplied by 3 instead of dividing D. They subtracted 3 instead of dividing by 3

2) A histogram shows the prices (in dollars) of items at a store. The intervals and their frequencies are: \$5–\$10: 12; \$10–\$15: 20; \$15–\$20: 18; \$20–\$25: 10. How many items in total are shown in the histogram?



3)

A circle graph shows that three sections each represent approximately 22% and one section represents approximately 34%. If the total is 450 items, how many items are in the largest section?

- A. 99 C. 150
 B. 130 D. 170

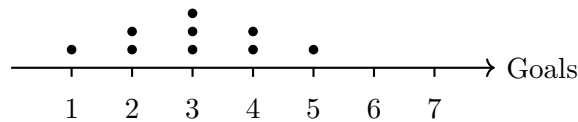


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& answers

4) A student calculates the area of a circle with radius 3 cm and gets 28.26 cm^2 . Which value of π did they use?

- A. $\pi \approx 3.5$
 C. $\pi \approx 2.5$
 B. $\pi \approx 2.2$
 D. $\pi \approx 3.14$

5) A dot plot shows the number of goals scored by 9 players:



What is the median number of goals?

- A. 2
 C. 4
 B. 3
 D. 5
- 6) Two datasets have the same mean of 50 but different standard deviations: Dataset A has $SD = 3$, Dataset B has $SD = 12$. What is the most significant difference?
- A. Dataset A is larger.
 C. Dataset A is more tightly clustered.
 B. Dataset B is larger.
 D. They are essentially identical.
- 7) A researcher plots reaction times (in milliseconds) for 11 participants:

Stem	Leaf
20	2, 5, 7
21	1, 3, 6, 8
22	0, 4, 6, 9

What is the median reaction time?

- A. 213 ms
 C. 218 ms
 B. 216 ms
 D. 220 ms



1) A lemonade stand sells lemonade and iced tea in a ratio of 3 : 2. If the stand sells 18 cups of lemonade, how many cups of iced tea does it sell?

- A. 6 cups C. 27 cups
 B. 30 cups D. 12 cups

2) A rectangular prism has volume 60 in^3 , length 5 in, and height 3 in. What is its width?

- A. 2 in C. 4 in
 B. 3 in D. 5 in

3) A student uses a chip model with red chips = -1 and blue chips = $+1$. Starting with 5 red and 4 blue, they remove 3 red. What is the result?

Start: 5 red + 4 blue



Remove 3 red chips



Remaining: 2 red + 4 blue



- A. -9 C. 9
 B. -2 D. 2

4) A river's water level was -2 feet (below normal). After heavy rain, it rose 5 feet. What is the new level relative to normal?

- A. -7 feet C. 3 feet
 B. -3 feet D. 7 feet



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& answers

5) Which expression correctly translates “the quotient of the sum of a and b and 2”?

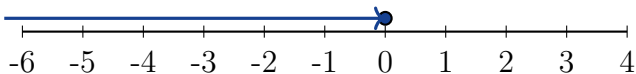
A. $a + \frac{b}{2}$

B. $\frac{a}{2} + b$

C. $\frac{a + b}{2}$

D. $2(a + b)$

6) Which number line represents $x \leq 0$?



A. Open circle at 0, arrow left

B. Closed circle at 0, arrow right

C. Open circle at 0, arrow right

D. Closed circle at 0, arrow left

7) Two adjacent sides of a rectangle are on the lines $x = 2$ and $y = 5$. One vertex is at $(2, 5)$. Another is at $(6, 5)$. Where is a third vertex?

A. $(2, 2)$

B. $(6, 8)$

C. $(2, 9)$

D. $(6, 2)$

8) A gym teacher records how many push-ups each student can do. Why is “How many push-ups can a student do?” a statistical question?

A. Because push-ups require strength.

B. Because different students can do

different numbers of push-ups.

C. Because the gym teacher asked it.

D. Because it is asked in gym class.

9) A map uses a scale of $1 \text{ cm} = 8 \text{ km}$. A river on the map measures 7 cm long. What is the actual length of the river in kilometers?



Vermont VTCAP Practice Test Answer Keys

How to use this Vermont VTCAP 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 green-mountain precision
3. rework the problem before reading the full explanation, using this reminder:
Keep the solution sturdy: read slowly, organize facts, and check the final answer.
A calm Vermont correction routine turns every missed item into useful practice. Use each round like a trail marker, then review what to strengthen before the next test.



Scan me!
For more practice
& answers

Vermont Practice Test Answers and Explanations

Review the eight printed VTCAP tests with sturdy, thoughtful, and ready for the next trail habits.

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** **(6.NS.C.7d)** Total allocated: $35\% + 15\% + 10\% = 60\%$. Remaining: $100\% - 60\% = 40\%$ of $\$3600 = 0.40 \times 3600 = \1440 .
- 2) **Choice B is correct.** **(6.EE.C.9)** Water is determined by rice: for every cup of rice, you need 3 cups of water. The equation is $w = 3r$.
- 3) **Choice C is correct.** **(6.G.A.1)** The area formula for any triangle is $A = \frac{1}{2}bh$, where b is base and h is height.
- 4) **Choice C is correct.** **(6.G.A.2)** $V = 6 \times 5 \times 0.8 = 30 \times 0.8 = 24 \text{ cm}^3$.
- 5) **Choice C is correct.** **(6.RP.A.1)** Radius $r = \frac{12}{2} = 6$ in. Area $= \pi r^2 \approx 3.14 \times 6^2 = 3.14 \times 36 = 113.04 \text{ in}^2$.
- 6) **Choice B is correct.** **(6.NS.B.3)** Starting debt: -75 . Payment of 30: $-75 + 30 = -45$. Remaining debt is $\$45$.
- 7) **Choice A is correct.** **(6.NS.B.3)** A positive times a negative is negative: $7 \times (-5) = -35$.
- 8) **Choice D is correct.** **(6.EE.A.3)** The valley is 1,200 m lower than the peak: $3,600 - 1,200 = 2,400$ m.
- 9) **Choice C is correct.** **(6.EE.A.2a)** The tree shows $3x$ and 5 combining via addition into $3x + 5$, representing the sum of $3x$ and 5. (Distractor B would be $3(x + 5) = 3x + 15$, which is different.)
- 10) **Choice B is correct.** **(6.EE.A.2c)** Simplify: $5x - 2x + 3 = 3x + 3$. Substitute $x = 4$: $3(4) + 3 = 12 + 3 = 15$.
- 11) **Choice C is correct.** **(6.EE.B.5)** Multiply both sides by 8: $x = 2 \times 8 = 16$.
- 12) **Choice B is correct.** **(6.G.A.1)** Area of a trapezoid $= \frac{1}{2}(b_1 + b_2) \times h = \frac{1}{2}(9 + 7) \times 6 = \frac{1}{2} \times 16 \times 6 = 48$ square units.
- 13) **Choice A is correct.** **(6.G.A.4)** Cube: $SA = 6(5)^2 = 150 \text{ cm}^2$. Pyramid: base $= 25 \text{ cm}^2$, lateral $= 4 \times \frac{1}{2}(5)(4) = 40 \text{ cm}^2$, total $= 65 \text{ cm}^2$. The cube has greater surface area.
- 14) **Choice D is correct.** **(6.SP.A.2)** A statistical question must expect variability and require data collection from multiple sources. Asking one person a question that has a single fixed answer (your parent's one specific age) does not make it statistical.
- 15) **Choice B is correct.** **(6.SP.A.2)** Mean increased from 150 to 155 (slightly more customers). Range decreased from 80 to 20 (much more consistent day-to-day).
- 16) **Choice B is correct.** **(6.SP.B.5c)** A box in a box plot spans from Q1 to Q3. The given box from 8 to 18 indicates Q1 = 8 and Q3 = 18, so the IQR = 10.
- 17) **Choice B is correct.** **(6.RP.A.1)** The left edge of the box is Q1, the first quartile.
- 18) **The correct answer is 0.9.** **(6.NS.B.3)** Divide: $5.4 \div 6 = 0.9$ kg per recipe.
- 19) **Choice C is correct.** **(6.NS.B.3)** Odd numbers: 1, 3, 5 (three outcomes). Probability $= \frac{3}{6} = \frac{1}{2}$.
- 20) **The correct answer is Opposite numbers and equivalent decimals/fractions.** **(6.NS.C.6c)** Statement B is correct because opposites are the same distance from zero on opposite sides. Statement C is correct because $0.25 = \frac{1}{4}$, so $-0.25 = -\frac{1}{4}$. Statements A, D, and E are false.
- 21) **Choice B is correct.** **(6.RP.A.3)** Truncating the axis at $\$8,000$ makes small differences (2–3% variations) appear much larger visually, potentially misleading viewers about the true magnitude of change.
- 22) **The correct answer is 101.** **(6.EE.B.8)** The least whole number greater than 100 is 101.
- 23) **Choice B is correct.** **(6.RP.A.3b)** From the double number line, 3 miles in 10 minutes gives $3 \div 10 = 0.3$ miles per minute.
- 24) **Choice B is correct.** **(6.RP.A.3)** The ratio is 5 : 6. When action figures are 30 (multiply by 6), dolls are $6 \times 6 = 36$.
- 25) **Choice B is correct.** **(6.RP.A.3a)** The unit cost is $\frac{\$0.80}{2 \text{ pencils}} = \0.40 per pencil. Verify: $\frac{\$1.60}{4} = \0.40 ✓.
- 26) **Choice C is correct.** **(6.RP.A.3)** At a scale of 1 : 50, the real object is 50 times larger. $8 \times 50 = 400$ inches.
- 27) **Choice D is correct.** **(6.NS.C.7d)** For $y = 6x$: when $x = 4$, $y = 6(4) = 24$, not 25. The point should be $(4, 24)$.



Hi, Brave Explorer!

◇ What a trip! You explored 8 full tests. You went to many math places: multiplication, fractions, area, time, and more. ◇

★ **Smart explorers know:** every trip teaches something. Through 8 tests, you learned a lot. You are a stronger math explorer now. ★

Your Explorer Tools

- **Map Reading:** You read problems carefully.
- **Trail Skills:** You take steps in the right order.
- **Backpack:** You have many math tools.
- **Brave Heart:** You explore even hard problems.

Explorer tip: on test day, use the tools you packed. You have the skills. You are ready!

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

Jay Daie

Your Math Trail Guide

MASTER MATH. ACE YOUR TESTS.

This Grade 6 Math Practice Tests book is designed to help students build confidence, strengthen math skills, and excel on comprehensive assessments.

With 8 full-length printed tests and 2 online tests, this resource provides realistic practice, a variety of question types, and detailed answer explanations to help students achieve their best.

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



PERFECT FOR

- ✓ Classroom Practice
- ✓ Homework & Review
- ✓ Independent Learning
- ✓ Test Preparation
- ✓ Skill Reinforcement
- ✓ Building Confidence



**PRACTICE TODAY.
SUCCEED TOMORROW.**

WHAT STUDENTS WILL GAIN



Stronger Math Skills

Build a solid foundation through targeted practice and review.



Better Problem Solving

Develop logical thinking and effective solution strategies.



Understand Key Concepts

Reinforce important math ideas aligned with standards.



Test Confidence

Get familiar with test formats and improve accuracy.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

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



2 ONLINE TESTS

Extra online practice to reinforce learning and build confidence.

MORE PRACTICE. GREATER RESULTS.

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



8 FULL-LENGTH
PRACTICE TESTS



2 ONLINE
PRACTICE TESTS



DETAILED ANSWER
EXPLANATIONS