

5

Vermont VT CAP

GRADE 6 MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



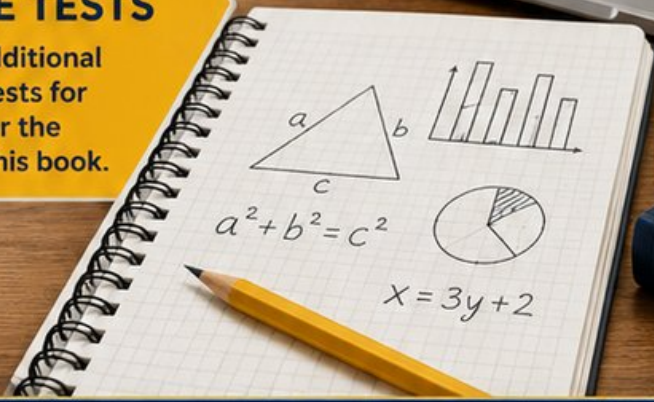
5 PRINTED TESTS

- ✓ Full-Length Practice Tests
- ✓ Realistic Questions
- ✓ Answer Key & Explanations



+ 2 ONLINE TESTS

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

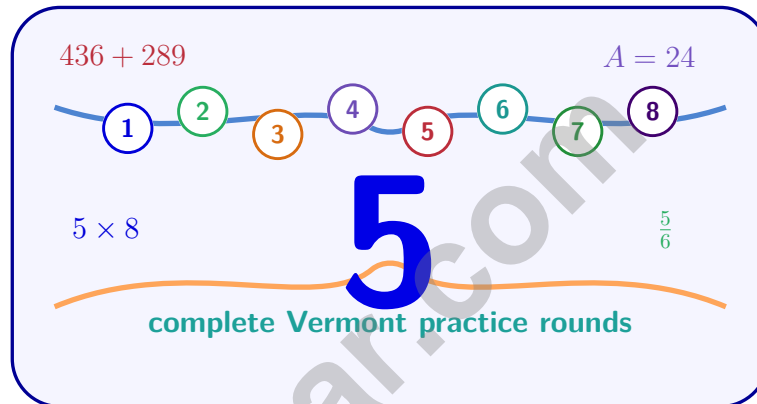


PREPARE • PRACTICE • SUCCEED



5 Vermont VTCAP Grade 6 Math Practice Tests

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



Five 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.

Jay Daie and Reza Nazari



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Welcome, Vermont Math Explorer!

Eight focused rounds using green-mountain precision

This book gives you five 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 five-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 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–4	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 5	Final stamina round 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.

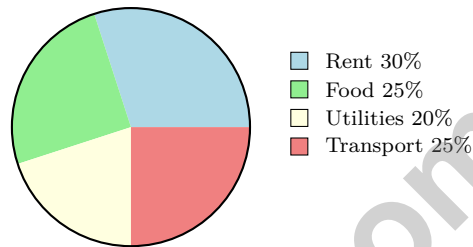


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- 1) In the expression $v + 15$, the variable v represents the cost of a video game before tax. What does $v + 15$ represent?
- A. The cost of the game before tax D. The difference between game and tax
- B. The tax on the game
- C. The cost of the game plus \$15



- 2) Aisha's monthly budget is shown in the pie chart above. If her monthly income is \$2000, how much does she allocate to rent?
- A. \$400 C. \$600
- B. \$500 D. \$700
- 3) A truck travels 350 miles on 14 gallons of gas. How many miles per gallon is the fuel efficiency?
- A. 20 mpg C. 24 mpg
- B. 22 mpg D. 25 mpg



Long Division: $3,456 \div 16$

$$34 \div 16 = 2, \text{ remainder } 2$$

$$\text{Bring down 5: } 25 \div 16 = 1, \text{ remainder } 9$$

$$\text{Bring down 6: } 96 \div 16 = 6, \text{ remainder } 0$$

Quotient: **216**

4)

What is the quotient of $3,456 \div 16$?

 A. 216

 C. 220

 B. 214

 D. 224

5) A bakery sells cookies in packs of 6. On Monday, they sold 36 cookies, and on Tuesday, they sold 42 cookies. How many packs did they sell in total over both days?

 A. 6 packs

 C. 13 packs

 B. 10 packs

 D. 78 packs

6) A rectangular prism has volume 27 cm^3 , length 4.5 cm, and height 2 cm. Find the width.

 A. 2 cm

 C. 5 cm

 B. 3 cm

 D. 6 cm

7)



The dots show lavender and cyan counters. Write the ratio of lavender to total in simplest form.

 A. 5 : 2

 C. 2 : 5

 B. 7 : 5

 D. 5 : 7


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8) The image shows counters arranged to show the ratio of blue to red.



3 blue, 2 red

Which statement describes this ratio correctly?

- A. For every 3 blue there is 1 red. C. For every 2 blue there are 3 red.
 B. For every 5 blue there are 2 red. D. For every 3 blue there are 2 red.

9) A farmer can plow 8 acres in $\frac{1}{2}$ day. At this rate, how many acres can the farmer plow in 3 days?

- A. 12 acres C. 36 acres
 B. 24 acres D. 48 acres

10)

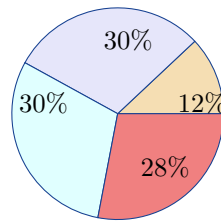
Proportional Relationship

Quantity A	Quantity B	Ratio
8	12	2 : 3
10	15	?
12	18	2 : 3

What ratio should fill the ? in the table above?

- A. 1 : 2 C. 2 : 5
 B. 2 : 3 D. 3 : 4





1)

In a circle graph, if a section has a central angle of 43.2° , what percent does it represent?

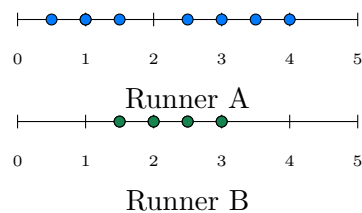
- A. 12% C. 18%
 B. 15% D. 20%

2) Use the box plot below to find the median:



- A. 2 C. 5
 B. 3 D. 7

3) Two runners' sprint times (seconds) over 8 races. Which runner has more consistent sprint times?

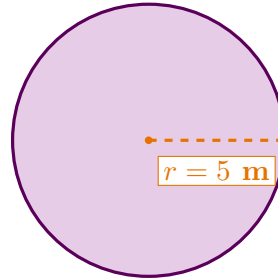


- A. Runner A C. Both are equally consistent
 B. Runner B D. Cannot determine from dot plots



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Shaded Circle



1)

The shaded circle has a radius of 5 meters. Using $\pi \approx 3.14$, what is the approximate area?

- A. 15.7 m^2 C. 78.5 m^2
 B. 31.4 m^2 D. 157 m^2

2) Find the mean of the data set: 4, 6, 8, 10, 12.

- A. 6 C. 10
 B. 8 D. 40

3) A data set of movie ratings (out of 10) is: 5, 6, 7, 7, 8, 8, 9, 10. The mean is 7.5. What is the MAD?

- A. 1.25 C. 2
 B. 1.5 D. 7.5

4) In a dataset, the median is 60 and the IQR is 20. If $Q_1 = 50$, what is Q_3 ?

- A. 40 C. 70
 B. 60 D. 80



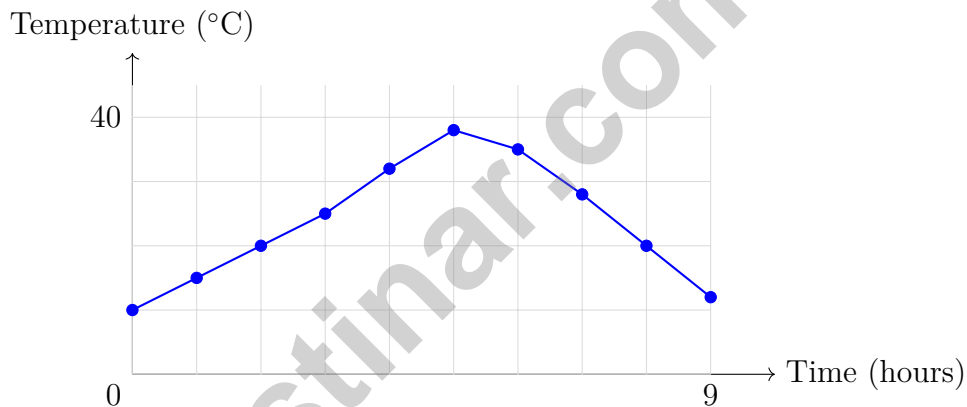
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5) A tennis comparison: Alice mean = 95 mph, median = 96 mph; Bob mean = 95 mph, median = 93 mph. Which is most reasonable?

- A. Alice has some very slow serves. C. Both are identical in performance.
 B. Bob has some very slow serves. D. Alice is consistently faster.

6) A bag of letter tiles contains 5 A's, 3 E's, and 2 I's. If one tile is drawn at random, what is the probability that it is **not** an A?

- A. $\frac{1}{10}$ C. $\frac{3}{5}$
 B. $\frac{1}{2}$ D. $\frac{5}{10}$



7)

This line graph shows how outdoor temperature changed from 6 AM to 3 PM. Which statement is TRUE?

- A. Temperature peaked around noon (5 hours after start) C. Temperature was highest at 6 AM
 B. Temperature decreased continuously all day D. Temperature was constant throughout the day



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.



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Vermont Practice Test Answers and Explanations

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

Practice Test 1 Answers and Explanations

- Choice C is correct.** **(6.EE.B.6)** $v + 15$ means add \$15 to the original price v .
- Choice C is correct.** **(6.EE.C.9)** Rent is 30% of income: $0.30 \times 2000 = \$600$.
- Choice D is correct.** **(6.RP.A.3b)** $350 \div 14 = 25$ miles per gallon.
- Choice A is correct.** **(6.NS.B.2)** The long division shows $16 \times 216 = 3,456$, so the quotient is exactly 216 with no remainder.
- Choice C is correct.** **(6.NS.B.4)** Total cookies: $36 + 42 = 78$. Factor using the distributive property: $36 + 42 = 6(6 + 7) = 6 \cdot 13 = 78$. So they sold 13 packs.
- Choice B is correct.** **(6.G.A.2)** $27 = 4.5 \times W \times 2 = 9 \times W$, so $W = 3$ cm.
- Choice D is correct.** **(6.RP.A.1)** Count the lavender counters first: there are 5. The total is $5 + 2 = 7$, so lavender to total is $5 : 7$.
- Choice D is correct.** **(6.RP.A.3)** Count the counters in the order named: 3 blue and 2 red. That gives $3 : 2$, so the matching language is "for every 3 blue there are 2 red."
- Choice D is correct.** **(6.RP.A.3d)** Find the unit rate: $8 \div \frac{1}{2} = 8 \times 2 = 16$ acres per day. Multiply by 3 days: $16 \times 3 = 48$ acres.
- Choice B is correct.** **(6.RP.A.3)** Each row maintains the ratio $2 : 3$. Row 1: $8 : 12 = 2 : 3$ (divide by 4). Row 2: $10 : 15 = 2 : 3$ (divide by 5). Row 3: $12 : 18 = 2 : 3$ (divide by 6). All rows have the ratio $2 : 3$.
- Choice B is correct.** **(6.RP.A.3a)** The ratio is 6 balls:2 rackets, which simplifies to $3:1$. So for every 3 tennis balls (x), there is 1 tennis racket (y). The constant of proportionality is $k = \frac{2}{6} = \frac{1}{3}$. Therefore, $y = \frac{1}{3}x$.
- The correct answer is 88.** **(6.SP.B.5)** With 10 scores, the median is the average of the 5th and 6th values: $(88 + 88) \div 2 = 88$.
- Choice D is correct.** **(6.RP.A.3c)** Columns 0–6 (7 columns) \times 10 rows = 70 squares = 70%.
- The correct answer is 0.25.** **(6.NS.B.3)** One correct choice out of 4 possible choices. Probability = $\frac{1}{4} = 0.25$.
- Choice D is correct.** **(6.RP.A.3c)** First shirt: \$40. Second shirt at 50% off: $0.50 \times 40 = 20$. Total: $\$40 + \$20 = \$60$.
- Choice B is correct.** **(6.RP.A.3)** Unit price: $3.75 \div 15 = 0.25$ dollars per ounce.
- The correct answer is 99.** **(6.NS.A.1)** 16.5% of 600 is $0.165 \times 600 = 99$ voters.
- Choice D is correct.** **(6.RP.A.3d)** Multiply: $5 \times 8 = 40$ fl oz.
- Choice A is correct.** **(6.NS.C.7d)** Savings: 20% of \$150 = $0.20 \times 150 = \$30$.
- The correct answer is The median divides the box into two 25% regions, and the upper whisker holds the top 25%.** **(6.RP.A.1)** B is correct: the median line splits the box so each half represents 25% of the middle 50% (thus 25% each). D is correct: the upper whisker extends from Q_3 to the max, representing the top 25%. A is wrong (lower whisker is bottom 25%, not 50%). C is incorrect (75% of data is at or below Q_3 , not above it). E is false (IQR is $Q_3 - Q_1$, not the range).
- Choice B is correct.** **(6.NS.C.7d)** For constant $k = 2.5$: $y/x = 2.5$. When $x = 6$: $y/6 = 2.5$, so $y = 6 \times 2.5 = 15$.
- Choice B is correct.** **(6.RP.A.3)** Divide: $9 \text{ m} \div 3 \text{ m/cm} = 3 \text{ cm}$.
- The correct answer is 38.** **(6.RP.A.3)** Add the two counts: $20 + 18 = 38$.
- Choice A is correct.** **(6.NS.A.1)** $\frac{3}{8} \div \frac{1}{4} = \frac{3}{8} \times 4 = \frac{12}{8} = \frac{3}{2}$. So $\frac{3}{8}$ is $1\frac{1}{2}$ jump lengths of size $\frac{1}{4}$.
- Choice D is correct.** **(6.NS.B.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.
- Choice D is correct.** **(6.NS.B.4)** The factors of 24 are 1, 2, 3, 4, 6, 8, 12, 24. Since 5 is not a factor of 24, we cannot divide equally into groups of 5.
- Choice A is correct.** **(6.NS.C.5)** Starting at 0: forward 15 gives +15, backward 8 gives $15 - 8 = 7$, forward 3 gives $7 + 3 = 10$ yards from the start.



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A Quiet Word From Your Mentor

Hi, Thoughtful Student,

◇ I want to take a moment to tell you something true: you did excellent work. 5 practice tests is a real promise that you kept to yourself. That matters. ◇

★ **Mentors notice:** growth is quiet. It doesn't shout. But it shows up in how you handle a problem today vs how you did weeks ago. That growth is your real prize. ★

What I See in You

- **Hard Work:** You don't quit when problems are tough.
- **Curiosity:** You wonder why and how.
- **Kindness:** You are patient with yourself.
- **Brave Heart:** You try things that scare you.

Mentor's note: on test day, treat yourself like you would a friend. Be kind. Be patient. Be encouraging. The skills are inside you!

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

Jay Daie

Your Math Mentor

PRACTICE MORE. ACHIEVE MORE.

This book provides **5 full-length Math practice tests** designed to help Grade 6 students strengthen their skills, build confidence, and excel on standardized assessments.

Each test is carefully crafted to reflect the latest standards and covers a wide range of math topics with realistic questions and detailed answer explanations.



BUILD CONFIDENCE

Practice builds familiarity and reduces test anxiety.



IMPROVE ACCURACY

Sharpen skills and avoid common mistakes.



ACHIEVE SUCCESS

Consistent practice leads to greater results.

WHAT'S INSIDE?



5 Full-Length Practice Tests

Realistic tests designed to mirror actual exam conditions.



Realistic Questions

A variety of question types to strengthen problem-solving skills.



Answer Keys & Explanations

Detailed solutions to help students learn and improve.



Performance Tracking

Track progress and identify areas that need improvement.



Comprehensive Coverage

All essential topics aligned with Grade 6 math standards.



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