

7 Vermont VTCAP

Grade 6 MATH

PRACTICE TESTS

7
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



7 Full-Length
Printed Tests



Standards-Aligned
Math Practice



Detailed Answer Keys
and Explanations



Build Confidence.
Achieve Success.



You've
Got
This!



PREPARE
PRACTICE
SUCCEED



PRACTICE
WITH PURPOSE



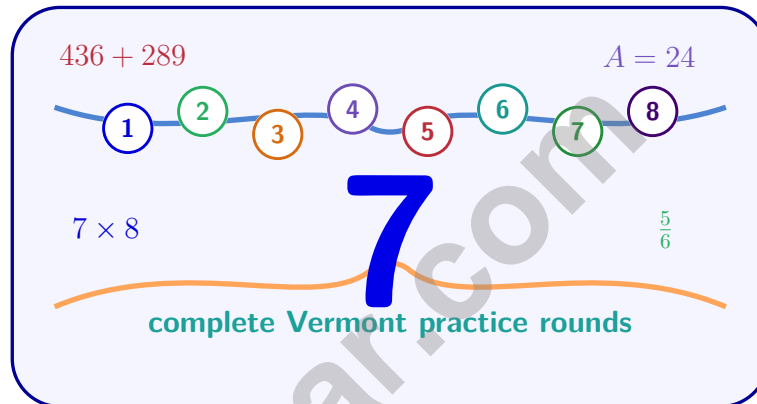
STRENGTHEN
MATH SKILLS



REVIEW, IMPROVE,
AND SUCCEED

7 Vermont VTCAP Grade 6 Math Practice Tests

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



Seven 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



Copyright ©

Testinar Inc



Published by Testinar Inc

Testinar.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



Copyright ©

Welcome, Vermont Math Explorer!

Eight focused rounds using green-mountain precision

This book gives you seven 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 seven-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.
Test 7	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.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	31
★ Practice Test 3	_____	44
★ Practice Test 4	_____	59
★ Practice Test 5	_____	74
★ Practice Test 6	_____	90
★ Practice Test 7	_____	105
Practice Test Answer Keys	_____	124
Practice Test Answers and Explanations	_____	129

1) Which of the following equations represents a proportional relationship?

A. $y = 3x + 2$

B. $y = 3x$

C. $y = x^2$

D. $y = 3 + x$

2) The MAD of a data set represents what?

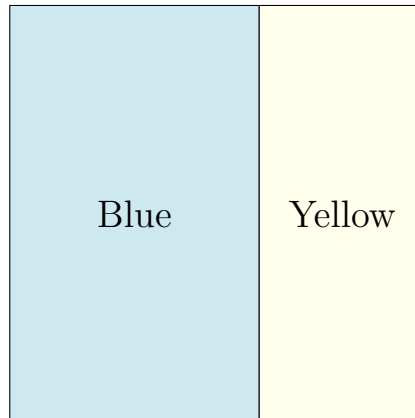
 A. The difference between the highest and lowest values. B. The average distance of the data points from the mean. C. The spread of the middle 50% of the data. D. The value that appears most often.

3) Two basketball teams' season statistics:

Team	Mean PPG	Std Dev
Hawks	72	8
Falcons	70	14

Which team had more consistent scoring?

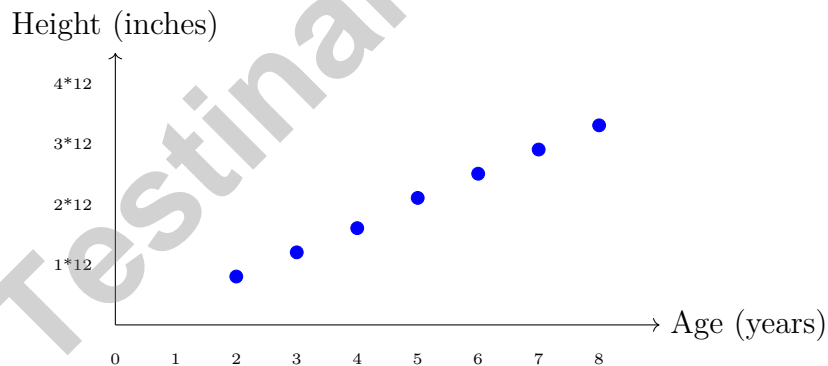
 A. Hawks (lower standard deviation) B. Falcons (higher mean) C. Both equally consistent D. Cannot tell from standard deviation



4)

Based on the grid above, what is the probability of selecting a blue square if one square is picked at random?

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



5)

This scatter plot shows the relationship between children’s ages and heights. What type of correlation does the data show?

- A. Negative correlation
- B. Strong positive correlation
- C. No correlation
- D. Perfect negative correlation



Scan me!
For more practice
& answers

6) At a campfire, the ratio of hot dogs to hamburgers is 7 : 5. Which of the following could be the total number of hot dogs and hamburgers combined at the campfire?

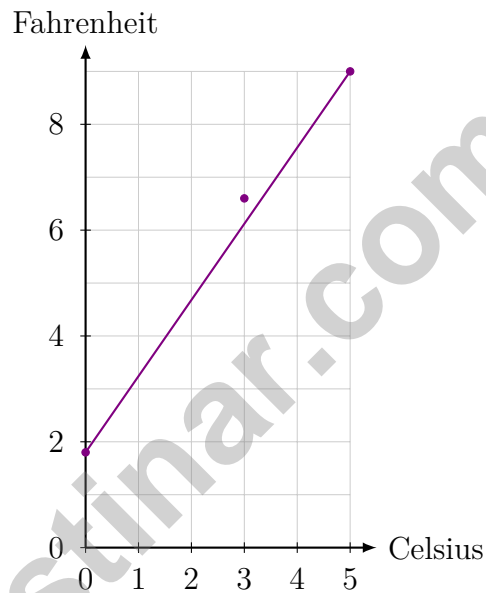
A. 10 items

C. 24 items

B. 20 items

D. 30 items

7) The graph below shows the relationship between temperature in Celsius (C) and Fahrenheit (F).



Based on the graph, which is the independent variable?

A. Fahrenheit

C. Temperature in general

B. Celsius

D. A thermometer



1) If you need a triangle with area 75 cm^2 and base 15 cm, what height is needed?

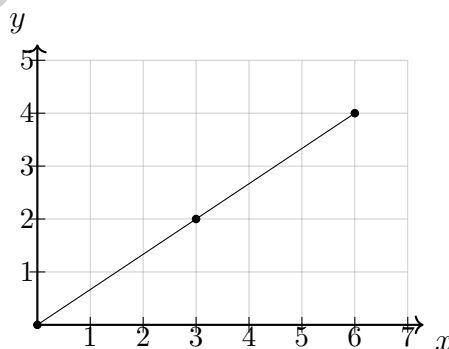
- A. 5 cm C. 15 cm
 B. 20 cm D. 10 cm

2)

Account	Balance (\$)
Savings	250
Checking	-15
Loan	-100

List the accounts from least money to most money.

- A. Savings, Checking, Loan C. Checking, Loan, Savings
 B. Loan, Checking, Savings D. Loan, Savings, Checking
- 3) A baker needs 8 cups of flour. How many fluid ounces is this? (Use 1 cup = 8 fluid ounces.)
- A. 64 fl oz C. 16 fl oz
 B. 56 fl oz D. 32 fl oz
- 4) A line on a coordinate plane has the equation $y = \frac{2}{3}x$. Which point lies on this line?



- A. (2, 4) C. (6, 4)
 B. (3, 3) D. (6, 9)



5) Which division problem has a quotient of exactly 125?

A. $2,500 \div 25$

C. $3,600 \div 30$

B. $3,000 \div 24$

D. $2,750 \div 25$

6) What is the GCF of 10 and 15?

A. 2

C. 5

B. 3

D. 10

7) Which point is NOT on an axis?

A. $(0, 5)$

C. $(0, 0)$

B. $(-3, 0)$

D. $(2, -4)$

8) A jar contains red and blue marbles. The ratio of red to blue is $3 : 5$. If there are 18 red marbles, how many blue marbles are in the jar?

9) A factory packages 480 items in 8 boxes. What is the unit rate in items per box?



Scan me!
For more practice
& answers

1) Two manufacturing plants' defect rates (per 1000 units) are summarized below.

Plant	Mean	Median	Range
Plant X	12	11	8
Plant Y	10	10	20

Which plant's performance is more predictable?

- A. Plant X, because it has a lower range
- B. Plant Y, because it has a lower mean
- C. Both are equally predictable
- D. Plant X, because the mean equals the median
- 2) A store compares three brands of olive oil.

Brand	Volume	Price
Extra Virgin	25.5 oz	\$12.75
Pure	51 oz	\$24.48
Light	68 oz	\$34.00

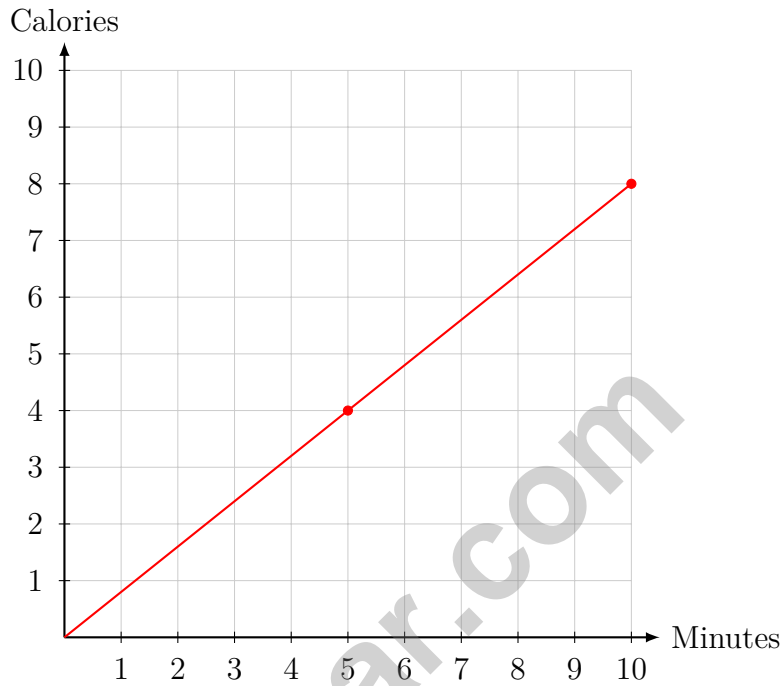
Which brand has the lowest unit price per ounce?

- A. Extra Virgin at \$0.50/oz
- B. Pure at \$0.48/oz
- C. Light at \$0.50/oz
- D. Light at \$0.51/oz



Scan me!
For more practice
& answers

3) The graph below shows the relationship between minutes exercised and calories burned.



How many calories are burned per minute?



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.



Vermont Practice Test Answers and Explanations

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

Practice Test 1 Answers and Explanations

- Choice B is correct.** (6.NS.C.7d) Proportional equations have the form $y = kx$ with no constant term. Only $y = 3x$ fits this form. Option A has a constant (+2), C is quadratic, and D has a constant term.
- Choice B is correct.** (6.SP.B.5c) MAD (mean absolute deviation) is calculated by finding the distance from each point to the mean, then averaging these distances.
- Choice A is correct.** (6.SP.B.5) Standard deviation measures spread. Hawks' lower standard deviation ($8 < 14$) indicates more consistent scoring around their mean.
- Choice C is correct.** (6.NS.B.3) Total squares = 100. Blue squares = 60. Probability = $\frac{60}{100} = \frac{3}{5}$.
- Choice B is correct.** (6.RP.A.3) The points follow a clear upward trend from left to right: as age increases, height increases. The points are closely aligned, indicating a strong relationship.
- Choice C is correct.** (6.RP.A.1) The ratio 7 : 5 means the total is $7 + 5 = 12$ parts. A valid total must be divisible by 12. Only 24 is divisible by 12 (since $24 \div 12 = 2$). So the total could be 24 items: 14 hot dogs and 10 hamburgers.
- Choice B is correct.** (6.EE.C.9) In this graph, Celsius is on the x -axis (independent variable); Fahrenheit is on the y -axis (dependent variable). We choose a temperature in Celsius first, then find the Fahrenheit equivalent.
- Choice D is correct.** (6.G.A.2) Using $V = B \times h = 12 \times 5 = 60 \text{ in}^3$.
- Choice C is correct.** (6.RP.A.1) Area = $\pi r^2 \approx 3.14 \times 6^2 = 3.14 \times 36 = 113.04 \text{ ft}^2$.
- Choice C is correct.** (6.SP.B.5c) The median of 2, 4, 6, 8, 10 is 6 (the middle value).
- Choice D is correct.** (6.SP.B.4) The bar for the 18–24 inch range has a height of 14, representing the number of plants in that height range.
- Choice D is correct.** (6.SP.B.4) In a proper stem-and-leaf plot, leaves must be arranged in ascending order within each stem. The incorrect plot has unsorted leaves; the correct plot shows leaves in order.
- Choice D is correct.** (6.NS.A.1) Each section represents 25%. The central angle is $0.25 \times 360^\circ = 90^\circ$.
- Choice D is correct.** (6.EE.A.2a) "The quotient of 18 and 2" is $\frac{18}{2}$. "The difference of $\frac{18}{2}$ and w " means $\frac{18}{2} - w$.
- Choice A is correct.** (6.EE.A.2c) Substitute $y = 1$: $9 - 2(1) = 9 - 2 = 7$.
- The correct answer is 4.** (6.NS.B.3) Solve $-10 + x = -6$, so $x = 4$.
- Choice C is correct.** (6.EE.B.5) Add 3 to both sides: $x + 3 = 12$.
- Choice D is correct.** (6.EE.B.8) A closed circle at 1 with arrow pointing left indicates the value 1 is included and all numbers less than 1 are solutions, so $x \leq 1$.
- Choice B is correct.** (6.G.A.1) $A = \frac{1}{2} \times 4.5 \times 6 = \frac{1}{2} \times 27 = 13.5 \text{ ft}^2$.
- Choice B is correct.** (6.RP.A.3b) Unit rate: $\$16 \div 4 = \4 per loaf. For 7 loaves: $7 \times \$4 = \28 .
- Choice B is correct.** (6.RP.A.3) The ratio is 8 : 2 or 4 : 1. When fish are 32 (multiply by 4), plants are $2 \times 4 = 8$.
- The correct answer is Both A and B correctly describe the relationship:** $-4 < 3$ and 3 is positioned to the right of -4 on a number line.. (6.NS.C.7d) A is correct ($-4 < 3$). B is correct because 3 appears to the right of -4 . C is false ($-4 < 3$, not greater). D is false because the distance is $3 - (-4) = 7$, not 6. E is false because the distance from -4 to 0 is 4 units, but the distance from 0 to 3 is 3 units.
- Choice D is correct.** (6.RP.A.3a) Pick the unit rate that matches the question. Since the y -axis is pages and the x -axis is minutes, the unit rate is $\frac{\text{pages}}{\text{minutes}} = \frac{5}{10} = 0.5$ pages per minute. In 50 minutes, the student reads $50 \times 0.5 = 25$ pages. (You can also reason: 10 minutes per 5 pages means 2 minutes per page, so $50 \div 2 = 25$ pages.)
- The correct answer is 6.** (6.NS.B.3) Step 1: $(-4) \times (-9) = 36$ (negative times negative is positive). Step 2: $36 \div 6 = 6$.
- Choice A is correct.** (6.NS.C.8) Reflecting across the y -axis flips the x -coordinate to its opposite, giving $(-a, b)$.



Scan me!
For more practice
& answers

Hi, Math Athlete!

◇ 7 practice tests done! That's serious training. Your math muscles are strong. You are in great shape for the big test. ◇

★ **Trainers know:** muscle memory is real. The more you practice, the more your brain knows what to do without thinking. You built that muscle memory! ★

Athlete Performance

- **Endurance:** TOP! You can finish a long test.
- **Strength:** STRONG! You handle hard problems.
- **Speed:** JUST RIGHT! You don't rush.
- **Recovery:** GOOD! You bounce back from tough questions.

Trainer tip: on test day, drink water, breathe deeply, and warm up with the easier questions first. Your training will carry you the rest of the way!

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

Jay Daie

Your Math Trainer

MASTER TODAY. SUCCEED TOMORROW.

This Grade 6 Math Practice Tests book is designed to help students strengthen their math skills, master important concepts, and build the confidence they need to excel on comprehensive assessments.

With 7 full-length printed tests and 2 online tests, students get the review, practice, and realistic test experience they need to improve accuracy, develop problem-solving abilities, and reach their full potential.

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.



Deeper Understanding

Reinforce key concepts aligned with standards through meaningful practice.



Test Confidence

Become familiar 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

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.



7 FULL-LENGTH
PRINTED TESTS



STANDARDS-
ALIGNED PRACTICE



DETAILED ANSWER
KEYS & EXPLANATIONS