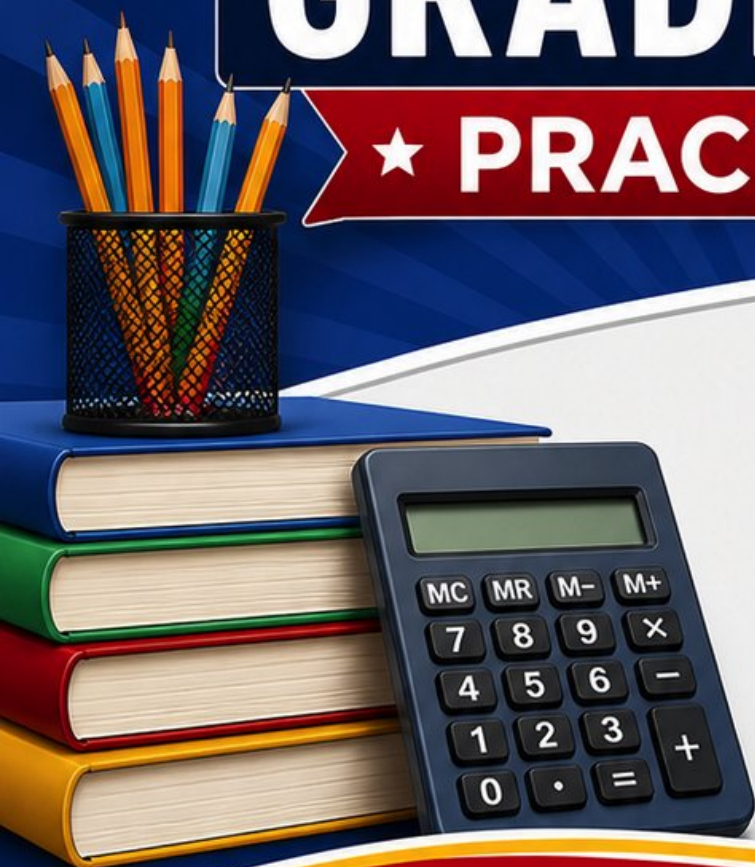


# 5 FULL-LENGTH Vermont VTCAP

## GRADE 5 MATH

### ★ PRACTICE TESTS ★



5 FULL-LENGTH  
PRACTICE TESTS



COMPLETE  
STANDARDS  
REVIEW



SKILL PRACTICE,  
WORD PROBLEMS,  
AND MORE!

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



$$12 \times 3 = 36$$



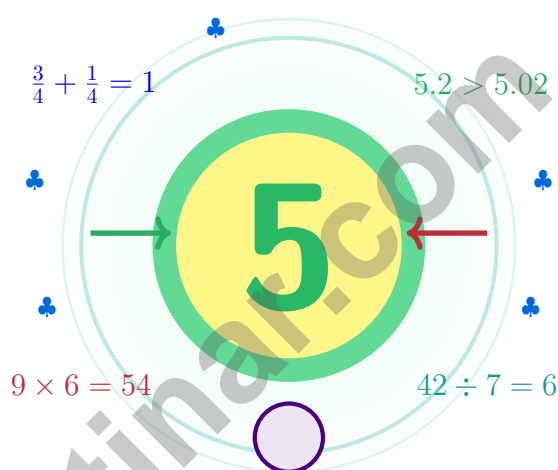
$$\frac{7}{10} = 0.7$$



**BUILT FOR SUCCESS. DESIGNED TO HELP EVERY STUDENT.**

# 5 Vermont VTCAP Grade 5 Math Practice Tests

*Five checkpoints, five growth checks, one calm routine*



Five full tests, a friendly quick review, smart strategy pages, and student-tested support that turn Grade 5 practice in The Green Mountain State into a steady quest of real growth.

**Jay Daie and Reza Nazari**



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# Vermont Math Crew, Welcome to the Quest

Five checkpoints, five growth checks, one calm routine

## To the Grade 5 Problem Solver

This book is your practice zone, not a place to be perfect. Each of the five tests gives you a chance to notice clues, choose a strategy, check your thinking, and come back stronger for the next round. Math is like a Green Mountain trail – it climbs gently, rewards patience, and never asks you to sprint.

Some questions will feel easy right away. Some will make you slow down, draw, estimate, or retry. That is excellent news. It means your math brain is doing real work.

### Notice

Notice everything the problem says, shows, and asks.

### Sketch

Sketch a quick model, table, or number line.

### Confirm

Confirm your answer with a quick estimate.

**A strong quest habit for Vermont:** slow down, write neatly, estimate before you solve, and keep going even when a problem looks tricky at first. That is exactly how confident math students are built.

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# How to Get the Most Out

A simple routine that turns five tests into real growth

## Step 1: Read

**Read the quick review pages first.**  
Wake up important ideas before you begin so your brain is ready to use them.

## Step 2: Try

**Try one full test with full attention.**  
Find a quiet space, work carefully, and let accuracy matter more than speed.

## Step 3: Reflect

**Reflect on which skills want more sunlight.**  
Circle missed questions and look for patterns. Which skill or habit needs another try?

## Step 4: Lift

**Lift those skills before the next test.**  
Read the explanation, repair the work, and carry that lesson into the next test.

## A Five-Week Vermont Quest Map

Week	Mission Focus
Week 1	Take Test 1 like a maple-grove morning.
Week 2	Take Test 2 and notice one habit that grew steadier.
Week 3	Take Test 3 and lift fractions, decimals, and conversions.
Week 4	Take Test 4 and slow down on multi-step problems.
Week 5	Take Test 5 with calm, careful focus.



# Table of Contents

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## Grade 5 Mathematics Reference Materials

### PERIMETER AND AREA

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

Area of Rectangle  $A = l \times w$

Area of Triangle  $A = \frac{1}{2} \times b \times h$

Volume of Rectangular Prism  $V = l \times w \times h$

### LENGTH

#### Customary

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

1 yard (yd) = 3 feet (ft)

1 yard (yd) = 36 inches (in.)

#### Metric

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

1 kilometer (km) = 1,000 meters (m)

### CAPACITY

#### Customary

1 cup (c) = 8 fluid ounces (fl oz)

1 pint (pt) = 2 cups (c)

1 quart (qt) = 2 pints (pt)

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### WEIGHT AND MASS

#### Customary

1 pound (lb) = 16 ounces (oz)

#### Metric

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### TIME

1 minute (min) = 60 seconds (sec)    1 week = 7 days

1 hour (hr) = 60 minutes (min)    1 year = 12 months

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1) Which expression would produce a result 10 times as much as  $24 \div 4$ ?

A.  $24 \div 4 + 10$

C.  $24 \div (4 + 10)$

B.  $10 \times (24 \div 4)$

D.  $(24 - 10) \div 4$

2) Convert:  $750 \text{ cm} = ? \text{ m}$ .

*Record your answer in the space provided.*

3)

Property	Square	Rectangle	Rhombus	Parallelogram (not rectangle or rhombus)
Two pairs parallel	✓	✓	✓	✓
All sides equal	✓		✓	
All angles $90^\circ$	✓	✓		

Which shape has two pairs of parallel sides but NOT all angles equal to  $90^\circ$  and NOT all sides equal?

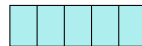
 A. Square

 D. Parallelogram (not rectangle or rhombus)

 B. Rectangle

 C. Rhombus

4) What is  $\frac{1}{8} \div 5$ ?



$\frac{1}{8}$  split into 5

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

C.  $\frac{1}{13}$

B.  $\frac{1}{40}$

D.  $\frac{1}{3}$



- 5) A baker uses 2.4 cups of flour for each batch. If the baker makes 15 batches, how many cups of flour are used?
- A. 36 cups                       C. 32 cups  
 B. 34 cups                       D. 38 cups
- 6) A school divided 52.3 kg of flour equally among 10 classrooms. How much flour did each classroom get?
- A. 523 kg                       C. 0.523 kg  
 B. 5.23 kg                       D. 52.3 kg
- 7) What is  $45 \times 7$ ?
- A. 305                       C. 325  
 B. 315                       D. 350
- 8) Which expression is NOT equal to the others?
- A.  $6 \times (2 + 1)$                        C.  $9 + 9$   
 B.  $(3 + 3) \times 3$                        D.  $2 \times 2 \times 2 \times 2 - 2$
- 9) A wall needs  $\frac{3}{7}$  gallon of paint. An artist uses  $\frac{1}{5}$  gallon. How much paint is left?
- A.  $\frac{2}{35}$  gallon                       C.  $\frac{15}{35}$  gallon  
 B.  $\frac{8}{35}$  gallon                       D.  $\frac{20}{35}$  gallon



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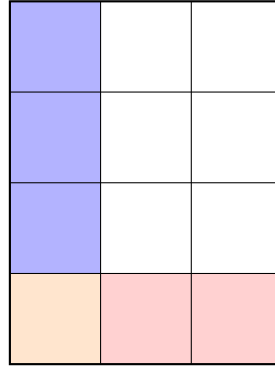
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- 1) A recipe makes 12 cookies. If you only want to make  $\frac{1}{3}$  of the recipe, and the recipe calls for  $\frac{3}{4}$  cup of butter, how much butter do you need?



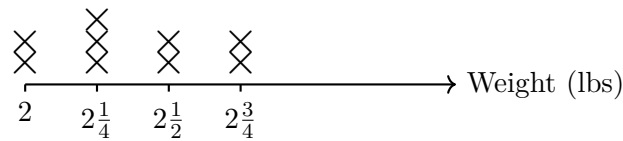
- A.  $\frac{1}{4}$  cup or  $\frac{3}{12}$  cup                       C.  $\frac{1}{2}$  cup  
 B.  $\frac{1}{3}$  cup     D.  $\frac{2}{3}$  cup

- 2) Complete the table showing multiples. Which number is the least common denominator for  $\frac{1}{6}$  and  $\frac{1}{8}$ ?

Denom.	Mult 1	Mult 2	Mult 3	Mult 4
6	6	12	18	24
8	8	16	24	32

- A. 18     C. 12  
 B. 32     D. 24

- 3) The line plot shows the weight (in pounds) of different fish caught:



What is the total weight of all fish?

- A.  $20\frac{1}{2}$  lbs     C.  $21\frac{1}{4}$  lbs  
 B. 21 lbs     D. 22 lbs



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## 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

- Choice B is correct.** **(5.OA.A.2)** To make an expression 10 times as much, multiply the entire expression by 10. That is why  $10 \times (24 \div 4)$  matches.
- The correct answer is 7.5 m.** **(5.MD.A.1)**  $750 \div 100 = 7.5$  m. Since 100 centimeters make 1 meter, divide centimeters by 100.
- Choice D is correct.** **(5.G.B.4)** This parallelogram has two pairs of parallel sides, but it does not have all right angles like a rectangle and does not have all sides equal like a rhombus.
- Choice B is correct.** **(5.NF.B.7c)**  $\frac{1}{8} \div 5 = \frac{1}{8} \times \frac{1}{5} = \frac{1}{40}$ .
- Choice A is correct.** **(5.MD.C.5)** Choose the operation from the story, then keep the unit with the answer. Multiply:  $2.4 \times 15 = 36$  cups. This confirms the answer.
- Choice B is correct.** **(5.NBT.A.2)** Dividing by 10:  $52.3 \div 10 = 5.23$  kg per classroom.
- Choice B is correct.** **(5.NBT.B.5)** Break 45 into 40 and 5:  $(40 \times 7) + (5 \times 7) = 280 + 35 = 315$ .
- Choice D is correct.** **(5.OA.A.1)** A, B, and C all have a value of 18. Choice D is  $2 \times 2 \times 2 \times 2 - 2 = 16 - 2 = 14$ , so it is not equal to the others.
- Choice B is correct.** **(5.NF.A.2)** Common denominator is 35:  $\frac{3}{7} = \frac{15}{35}$  and  $\frac{1}{5} = \frac{7}{35}$ . So  $\frac{15}{35} - \frac{7}{35} = \frac{8}{35}$  gallon.
- Choice C is correct.** **(5.NF.B.7c)** Start with one unit fraction,  $\frac{1}{7}$ , and share it into 3 equal parts. Each part is  $\frac{1}{7} \div 3 = \frac{1}{21}$  of the whole.
- Choice C is correct.** **(5.G.B.3)** By definition, a rhombus has all four sides of equal length.
- Choice C is correct.** **(5.NF.A.2)**  $\frac{6}{6} - \frac{1}{6} = \frac{5}{6}$ .
- Choice B is correct.** **(5.MD.C.5a)**  $V = B \times h = 45 \times 2 = 90$  m<sup>3</sup>.
- Choice A is correct.** **(5.NF.A.1)** Borrow 1 from 7:  $6\frac{11}{8} - 4\frac{6}{8} = 2\frac{5}{8}$ .
- Choice D is correct.** **(5.G.B.4)** An equilateral triangle has all angles equal to 60 degrees (acute), so it cannot have an obtuse angle.
- Choice B is correct.** **(5.G.A.2)**  $5 + 7 = 12$ . Choice D is not correct because  $2 + 7 = 9$ , not 8.
- Choice C is correct.** **(5.G.A.2)** Point (3, 7) has neither the same  $x$ -coordinate (6) nor the same  $y$ -coordinate (5) as (6, 5). The other three points share either an  $x$ - or  $y$ -coordinate with (6, 5).
- Choice D is correct.** **(5.NBT.A.2)** A power of 10 tells how many factors of 10 to use.  $36 \div 10 = 3.6$ . This confirms the answer.
- Choice C is correct.** **(5.NBT.A.2)**  $20 \times 500$  is  $2 \times 5$  with four zeros altogether. Since  $2 \times 5 = 10$ , the product is 10,000, which has 4 zeros.
- Choices A, B are correct.** **(5.NBT.B.7)** Dividing 10 by a value less than 1 gives a quotient greater than 10, so A and B work. C and D have divisors greater than 1, so those quotients are less than 10.
- Choice A is correct.** **(5.OA.A.2)** "Three times 4" becomes  $3 \times 4$ . The phrase asks for the sum of 15 and that product, so use  $15 + 3 \times 4$ .
- The correct answer is  $\frac{5}{9}$ .** **(5.NF.B.5a)** Multiplying by 1 does not change the value, so  $1 \times \frac{5}{9} = \frac{5}{9}$ .
- Choice D is correct.** **(5.NBT.A.3b)** Shortest time = fastest. Compare:  $6.204 < 6.24 < 6.402 < 6.42$ . Dana's time of 6.204 s is shortest.
- Choice B is correct.** **(5.NF.A.1)**  $\text{LCM}(12, 8) = 24$ .  $\frac{7}{12} = \frac{14}{24}$  and  $\frac{1}{8} = \frac{3}{24}$ .  $\frac{14}{24} + \frac{3}{24} = \frac{17}{24}$ .
- Choice A is correct.** **(5.NBT.A.2)** Each number is 10 times the previous number:  $0.08 \times 10 = 0.8$ , and  $0.8 \times 10 = 8$ .
- The correct answer is 26.** **(5.OA.B.3)** Each term increases by 3. Starting at 5: term 8 is  $5 + (8 - 1) \times 3 = 5 + 21 = 26$ .
- Choice A is correct.** **(5.NBT.A.4)** The hundredths digit is 9. The thousandths digit is 4. Since  $4 < 5$ , keep hundredths as 9, giving 20.39.
- Choice A is correct.** **(5.NBT.A.1)** "Six and forty-three thousandths" means 6 ones and 43 thousandths. In decimal:  $6 + \frac{43}{1000} = 6.043$ .
- Choice A is correct.** **(5.MD.C.5)** Check the student's height:  $15 \times 9 \times 3 = 405$ , not 270. The base area is  $15 \times 9 = 135$  square centimeters, and  $270 \div 135 = 2$ , so the correct height is 2 cm.



**Flight Log Entry**

---

**Hello, Ace Pilot!**

★ Flight certification complete! You've successfully piloted through five complete training missions, navigating mathematical turbulence and landing solutions with expert precision like a certified pilot! Each test was a flight through different conditions, and you demonstrated excellent navigation skills, situational awareness, and steady control throughout. You're cleared for your important test day flight!

★

◇ **Here's what experienced pilots understand:** they complete hundreds of hours of flight training before flying solo. They practice procedures until they become automatic responses. You've logged those training hours through these five tests! Your mathematical flight skills have become so developed that you'll navigate test day smoothly and confidently! ◇

**Pre-Flight Clearance Report**

- **Navigation Systems:** All problem-solving instruments calibrated and functioning!
- **Weather Assessment:** You can handle any mathematical conditions that arise!
- **Emergency Procedures:** You know how to respond when encountering difficult questions!
- **Flight Approved:** Tower clears you for test day takeoff!

**Remember this aviation principle:** pilots stay calm because they trust their training. When you encounter turbulence on test day, remember your five training missions. You've already experienced challenging questions and navigated successfully through them. Use your instruments (strategies), trust your training, and fly confidently toward your destination!

Want to share flight logs or discuss interesting mathematical air traffic patterns? Send transmissions to [reza@testinar.com](mailto:reza@testinar.com). Your control tower is listening!

**Reza Nazari & Jay Daie**

Your Math Teacher and Practice Partner

# 5 FULL-LENGTH TESTS. STRONG SKILLS. BRIGHTER RESULTS.



Build confidence and master math with **5 full-length** practice tests designed to reflect the real test experience. This book provides the practice, review, and support students need to succeed in Grade 5 and beyond!

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and problem-  
solving skills



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