

# Virginia SOL

## GRADE 6 MATH PRACTICE TESTS

Standards Aligned Problem Solving  
For Comprehensive Assessment Programs



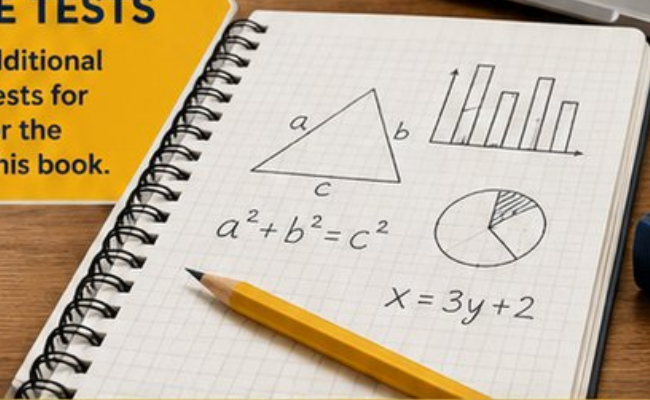
### 5 PRINTED TESTS

- ✓ 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 Virginia SOL Grade 6 Math Practice Tests

*Standards-Aligned Commonwealth-Ready Math Practice for Standards of Learning*



Five complete 40-question Grade 6 practice rounds for SOL, built for commonwealth-ready math practice 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, Virginia Math Explorer!

Eight focused rounds using commonwealth-ready math practice

This book gives you five full Grade 6 practice tests for SOL. Each round uses historic routes, mountain views, and careful solution checks as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

## Your Virginia Practice Promise

Build the answer with evidence: identify the skill, show the work, and verify the result.

Read

Plan

Check

## How to Use This Book

A five-session routine for commonwealth-ready math practice

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

**Virginia review rhythm:** Take one round, review the reasoning, and use the next test to improve precision.



## What Is Inside?

Eight SOL 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. Commonwealth-ready math practice means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



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For more practice  
& answers

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1) A student earns \$8 per hour. If the student works  $h$  hours, which expression shows the total earnings?

A.  $h + 8$

C.  $8h$

B.  $h - 8$

D.  $\frac{8}{h}$

2) A scale drawing uses 1 inch = 10 feet. A square room is drawn with a side length of 2 inches. What is the actual area of the room?

A. 20 sq ft

C. 100 sq ft

B. 40 sq ft

D. 400 sq ft

3) A gym membership costs \$40 per month. Create a table for months 0, 1, 2, and 3. Is the cost proportional to the number of months?

<b>Months</b>	0	1	2	3
<b>Cost (\$)</b>	0	40	80	120

 A. No; 0 months costs \$0

 D. Yes; the ratio cost/months is

 B. Cannot determine from the table

 constant

 C. No; there is no constant fee

4) Elena's income is \$400 per month. After saving 35%, how much does she have available for spending and expenses?

Savings	Available
35%	65%

Income = \$400

 A. \$140

 C. \$260

 B. \$165

 D. \$385


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**Partial Quotients:**  $5,472 \div 24$

$$24 \times 200 = 4,800 \Rightarrow 5,472 - 4,800 = 672$$

$$24 \times 20 = 480 \Rightarrow 672 - 480 = 192$$

$$24 \times 8 = 192 \Rightarrow 192 - 192 = 0$$


---

Quotient:  $200 + 20 + 8 = \mathbf{228}$

5)

What is  $5,472 \div 24$  using partial quotients?

- |                                 |                                 |
|---------------------------------|---------------------------------|
| <input type="checkbox"/> A. 226 | <input type="checkbox"/> C. 230 |
| <input type="checkbox"/> B. 232 | <input type="checkbox"/> D. 228 |

6) Simplify the ratio 14 : 21.

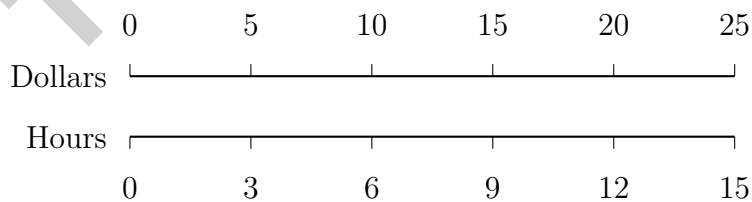
- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| <input type="checkbox"/> A. 1 : 2 | <input type="checkbox"/> C. 3 : 2   |
| <input type="checkbox"/> B. 2 : 3 | <input type="checkbox"/> D. 14 : 21 |

7) Which pair of statements both describe the same ratio?

Statement X: The ratio of first part to second part is 6 : 4.

Statement Y: For every 3 units of the first part there are 2 units of the second part.

- |   |  |
|---|--|
| <input type="checkbox"/> A. Yes, they describe the same ratio.  | <input type="checkbox"/> C. They cannot be compared.           |
| <input type="checkbox"/> B. No, they describe different ratios. | <input type="checkbox"/> D. Only Statement X is a valid ratio. |

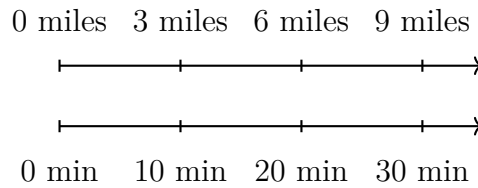


8)

Based on the double number line, what is the rate in dollars per hour?

- |  |   |
|--|---|
| <input type="checkbox"/> A. $\frac{5}{3}$ dollars per hour | <input type="checkbox"/> C. 5 dollars per hour  |
| <input type="checkbox"/> B. $\frac{3}{5}$ dollars per hour | <input type="checkbox"/> D. 15 dollars per hour |

- 9) A runner completes a race at a constant speed. The double number line shows the distance and time.



What is the unit rate in miles per minute?

- A. 0.2 mi/min                       C. 3 mi/min  
 B. 0.3 mi/min                       D. 10 mi/min
- 10) A recipe uses a ratio of 2 cups of flour to 3 cups of sugar. The table shows how much flour is needed for different amounts of sugar. What is the missing value?

Flour (cups)	Sugar (cups)
2	3
4	6
?	12

- A. 6                                       C. 10  
 B. 8                                       D. 12
- 11) A coordinate plane shows points representing a proportional relationship between yards and meters. One point is (3, 2.74) and another is (6, 5.48). Are these points on the same proportional line? Which statement is correct?
- A. No, because the x-coordinates are different       C. No, because both coordinates must be whole numbers  
 B. No, because the y-coordinates are different       D. Yes, because  $\frac{2.74}{3} \approx \frac{5.48}{6} \approx 0.91$



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1) Two points are at  $(-6, -2)$  and  $(3, -2)$ . What is the distance?

A. 6 units

C. 8 units

B. 7 units

D. 9 units

2) Two datasets: A:  $\{5, 6, 7, 8, 9\}$ ; B:  $\{2, 5, 8, 11, 14\}$ . Compare the spreads.

A. Dataset A has greater spread.

C. Both have the same spread.

B. Cannot compare without IQR.

D. Dataset B has greater spread.

3) Which statement describes an **unlikely** event (probability between 0 and 0.5)?

A. The probability is 0.9.

C. The probability is 0.6.

B. The probability is 0.15.

D. The probability is 1.0.

4) A stem-and-leaf plot of student test scores is given:

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

What is the mode of the test scores?

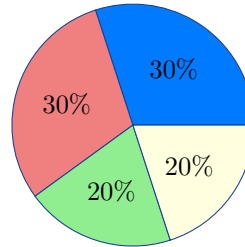
A. 70

C. 80

B. 74

D. No single mode





5)

The circle graph shows survey results for 500 people. What is the central angle for the 30% section?

- A.  $90^\circ$                        C.  $120^\circ$   
 B.  $135^\circ$                        D.  $108^\circ$

6) A histogram shows test scores with intervals: 60–69 (frequency 3), 70–79 (frequency 8), 80–89 (frequency 6), 90–99 (frequency 2).

What is the total number of students who took the test?

- A. 17                               C. 21  
 B. 19                               D. 24

7) A scale drawing uses a scale of 1 inch = 4 feet. If a room is drawn as 3.5 inches wide, what is the actual width?

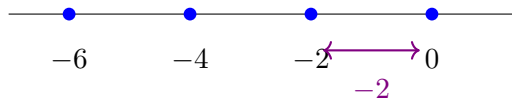
- A. 7 feet                               C. 14 feet  
 B. 12 feet                               D. 16 feet

8) A rental car costs \$25 per day plus \$50 deposit. Total cost is  $25d + 50$  for  $d$  days. What is the meaning of  $25d$ ?

- A. The total cost of the rental                       D. The cost per day multiplied by the  
 B. The fixed overhead cost                              number of days  
 C. The deposit amount



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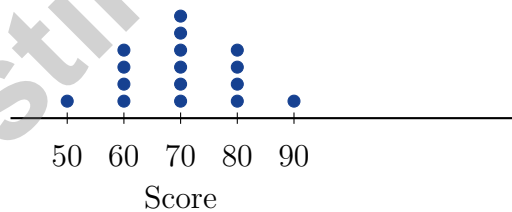
1)

The number line shows positions at 0, -2, -4, -6. Which multiplication describes moving left by 2 units, four times?

- A.  $4 \times 2 = 8$
- B.  $4 \times (-2) = -8$
- C.  $(-4) \times 2 = -8$
- D.  $(-4) \times (-2) = 8$

2) Evaluate  $2n - 7$  when  $n = 15$ .

3) A dot plot shows exam scores. When comparing the shape, what is the difference between a right-skewed distribution and a symmetric distribution?



- A. Symmetric has a longer tail; right-skewed is centered
- B. Right-skewed has a longer tail to the right; symmetric is balanced on both sides
- C. They have the same shape but different heights
- D. Right-skewed means all values are equal



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- 4) A dataset's five-number summary is:  $\min = 12$ ,  $Q_1 = 22$ ,  $\text{median} = 30$ ,  $Q_3 = 38$ ,  $\max = 48$ . Based on the five-number summary, which value appears to be the most typical of the data?
- A. The minimum value of 12                       C. The maximum value of 48  
 B. The median value of 30                       D. The range of 36
- 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 survey shows that the probability a person likes ice cream is 90%. What is the probability that a person does **not** like ice cream?
- A. 0.1                       C. 0.5  
 B. 0.2                       D. 0.9
- 7) A teacher examines a stem-and-leaf plot and notices that all leaves for a particular stem are identical (e.g., stem 5 has leaves 3, 3, 3, 3). What does this indicate about the data?
- A. The data is not properly organized                       C. The plot must contain an error  
 B. Several data values are the same                       D. All data must be in the same range (repeated data points)
- 8) A library surveyed 1000 patrons about book genre. The circle graph shows 18% prefer mystery. How many patrons prefer mystery?
- A. 160                       C. 180  
 B. 140                       D. 200



## Virginia SOL Practice Test Answer Keys

**How to use this Virginia SOL 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 commonwealth-ready math practice
3. rework the problem before reading the full explanation, using this reminder:  
Build the answer with evidence: identify the skill, show the work, and verify the result.

**A calm Virginia correction routine turns every missed item into useful practice. Take one round, review the reasoning, and use the next test to improve precision.**



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## Virginia Practice Test Answers and Explanations

Review the five printed SOL tests with prepared, precise, and ready for the next challenge habits.

### Practice Test 1 Answers and Explanations

- Choice C is correct.** (6.PFA.4) Earnings = hourly rate  $\times$  hours worked =  $8 \times h = 8h$ .
- Choice D is correct.** (6.PFA.2) Actual side:  $2 \times 10 = 20$  feet. Area:  $20 \times 20 = 400$  sq ft.
- Choice D is correct.** (6.PFA.2) For months 1, 2, 3: cost/months =  $40/1 = 80/2 = 120/3 = 40$ . The constant ratio (ignoring the 0,0 point) shows proportionality. The equation is  $c = 40m$ .
- Choice C is correct.** (6.PFA.4) Available:  $100\% - 35\% = 65\%$  of  $\$400 = 0.65 \times 400 = \$260$ .
- Choice D is correct.** (6.CE.2) Using partial quotients:  $200 + 20 + 8 = 228$ . Verify:  $24 \times 228 = 5,472$ .
- Choice B is correct.** (6.PFA.2) Look for the greatest common factor of 14 and 21. They share a factor of 7, so divide both parts by 7:  $\frac{14}{7} : \frac{21}{7} = 2 : 3$ . Heads up: choice A (1 : 2) looks close, but it is not equivalent to 14 : 21.
- Choice A is correct.** (6.PFA.4) Simplify 6 : 4 by dividing both parts by 2 to get 3 : 2. Statement Y says the same thing in words, so the two statements match.
- Choice A is correct.** (6.PFA.2) From the double number line, 3 hours corresponds to 5 dollars. The rate is  $5 \div 3 = \frac{5}{3}$  dollars per hour.
- Choice B is correct.** (6.MG.1) From the double number line, 3 miles in 10 minutes gives  $3 \div 10 = 0.3$  miles per minute.
- Choice B is correct.** (6.PFA.1) The ratio 2 : 3 is constant. When sugar is 12, multiply by 4:  $2 \times 4 = 8$  cups of flour.
- Choice D is correct.** (6.MG.3) Both points have the same unit rate (constant of proportionality):  $\frac{2.74}{3} \approx 0.913$  meters per yard and  $\frac{5.48}{6} \approx 0.913$  meters per yard. The points are collinear and proportional.
- Choice A is correct.** (6.NS.1)  $\frac{150}{250} = \frac{3}{5} = \frac{60}{100} = 60\%$ .
- The correct answer is 3.** (6.NS.1) Number of green marbles =  $\frac{1}{3} \times 9 = 3$ .
- The correct answer is 43.** (6.PS.2) In order: 32, 35, 38, 41, 43, 46, 49, 50, 54. With 9 values (odd), the median is the 5th value: 43.
- Choice A is correct.** (6.CE.1) 20% increase:  $0.20 \times 55 = 11$ . New price is  $\$55 + \$11 = \$66$ .
- Choice D is correct.** (6.NS.3) Check:  $6 : 14 = (6 \div 2) : (14 \div 2) = 3 : 7$ . The other pairs are not equivalent.
- Choice C is correct.** (6.CE.2) Multiply:  $0.75 \times 1000 = 750$  grams.
- Choice C is correct.** (6.MG.1) Profit = Revenue - Costs =  $\$180 - \$45 = \$135$ .
- Choice B is correct.** (6.CE.1) Invert  $\frac{4}{5}$  to  $\frac{5}{4}$ , then multiply:  $\frac{2}{3} \times \frac{5}{4} = \frac{10}{12}$ . That reduces nicely to  $\frac{5}{6}$ .
- Choice A is correct.** (6.PFA.4) Add:  $2.25 + 3.75 = 6.0$  km.
- Choice A is correct.** (6.CE.1) Distributive property:  $8(6 + 2) = 8 \cdot 6 + 8 \cdot 2 = 48 + 16 = 64$ . Choice A shows the expanded form.
- The correct answer is Right-skewed distribution with high outliers.** (6.PS.2) When mean (60) > median (55), the tail points right, pulled by high values. (A) A right-skewed distribution matches. (C) High values pull mean up. (B) is wrong—left skew would give mean < median. (D) is wrong—low values would pull mean down. (E) is wrong—symmetric means mean = median.
- The correct answer is 99.** (6.NS.1) 16.5% of 600 is  $0.165 \times 600 = 99$  voters.
- Choice B is correct.** (6.PFA.2) Starting at floor 0: up 6 brings us to floor 6. Down 10 from floor 6 brings us to floor  $6 - 10 = -4$  (four floors below ground level).
- Choice D is correct.** (6.NS.1) The decimal  $-0.5$  equals one-half of  $-1$ , which is  $-\frac{1}{2}$ .
- The correct answer is 10.** (6.PS.1) IQR =  $Q_3 - Q_1 = 70 - 60 = 10$ .



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A Quiet Word From Your Mentor

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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](mailto: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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