

# 6

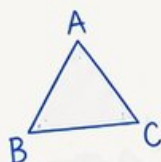
# Virginia SOL

GRADE  
**6**  
MATH

## PRACTICE TESTS

Standards-Aligned  
Steady Southern  
Problem Solving for  
Comprehensive  
Assessment Program

$$2x + 3 = 11$$



$$7^2 = 49$$

BUILD SKILLS.  
GAIN CONFIDENCE.  
**SUCCEED!**



### 6 PRINTED TESTS

Realistic practice to  
build confidence  
and mastery



### 2 ONLINE TESTS

Extra practice for  
continued success



### DETAILED ANSWER EXPLANATIONS

Learn with step-by-step  
solutions



### FOCUSED & EFFECTIVE

Target key math skills  
with purposeful  
practice



### 6 PRINTED TESTS + 2 ONLINE TESTS

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



### PRACTICE

Sharpen skills  
with targeted  
practice tests



### REVIEW

Understand  
concepts and  
strengthen skills



### SUCCEED

Build confidence  
and achieve  
your best

# 6 Virginia SOL Grade 6 Math Practice Tests

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



Six 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 six 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 six-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 3–5	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 6	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.

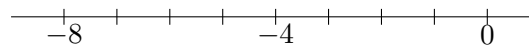


Scan me!  
For more practice  
& answers

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- 1) Find the area of a triangle with vertices forming an obtuse angle, base 13 m, and perpendicular height 6 m.
- A.  $19 \text{ m}^2$                        C.  $78 \text{ m}^2$   
 B.  $39 \text{ m}^2$                        D.  $156 \text{ m}^2$
- 2) A pet store has  $f$  fish. After selling 25 fish, how many fish does it have left? Write an expression.
- A.  $f + 25$                        C.  $f - 25$   
 B.  $25 - f$                        D.  $25f$
- 3) Which equation is equivalent to  $x + 6 = 13$ ?
- A.  $x = 13 - 6$                        C.  $x = 13$   
 B.  $x = 7$                        D.  $x = 13 + 6$
- 4) Which calculation is correct?
- A.  $0.2 \times 0.3 = 6$                        C.  $0.2 \times 0.3 = 0.06$   
 B.  $0.2 \times 0.3 = 0.006$                        D.  $0.2 \times 0.3 = 0.6$
- 5) An error in understanding negatives: A student claims that  $-4 < -8$  because "4 is less than 8." What is wrong with this reasoning?



- A. The student ignores the negative signs;  $-4 > -8$                        C. Negative numbers cannot be compared
- B. The student should add the numbers instead                       D. The student is correct;  $-4 < -8$



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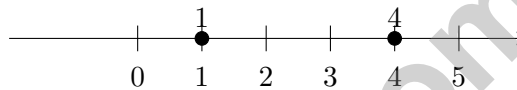
6) The absolute value of a negative number is:

- A. Always negative                       D. Sometimes negative and sometimes positive
- B. Always positive
- C. Always zero

7) If the point  $(6, -4)$  is reflected across the  $x$ -axis and then across the  $y$ -axis, what are the final coordinates?

- A.  $(6, -4)$                                C.  $(6, 4)$
- B.  $(-6, 4)$                                D.  $(-6, -4)$

8)



If  $A = 1$  and  $B = 4$ , order  $-A$ ,  $-B$ , and 0.

- A.  $-B < -A < 0$                        C.  $0 < -A < -B$
- B.  $-A < -B < 0$                        D.  $-B = -A$

9) Evaluate:  $(4 - 1) \times 2^2 - 1$

- A. 6     C. 12
- B. 20                                         D. 11

10) Which expression matches “the difference of a number  $t$  and 3”?

- A.  $3 - t$                                    C.  $t + 3$
- B.  $t - 3$                                    D.  $3t$



11) The price of gas cannot go below \$2.50 per gallon. Which inequality represents the price  $p$ ?

A.  $p \leq 2.50$

B.  $p < 2.50$

C.  $p > 2.50$

D.  $p \geq 2.50$

12) Which inequality means “all numbers greater than or equal to  $-5$ ”?

A.  $x > -5$

B.  $x < -5$

C.  $x \leq -5$

D.  $x \geq -5$

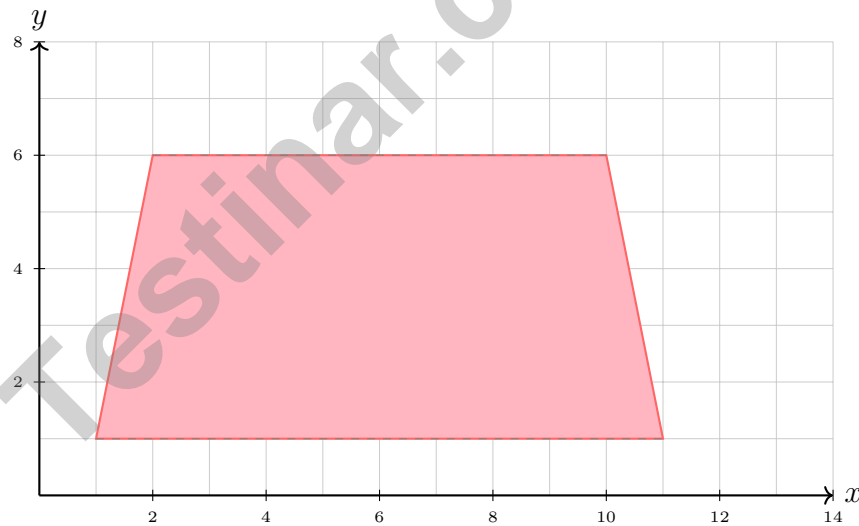
13) A rectangle has vertices at  $(1, 1)$ ,  $(7, 1)$ ,  $(7, 4)$ , and  $(1, 4)$ . What is its perimeter?

A. 9 units

B. 15 units

C. 18 units

D. 24 units



14)

A trapezoid has bases of 10 units and 8 units, with a height of 5 units. What is its area?

A. 40 square units

B. 45 square units

C. 50 square units

D. 55 square units

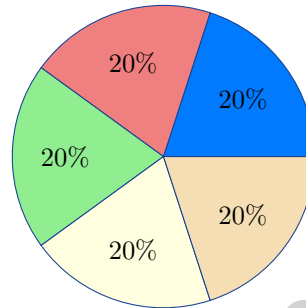


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4) Using the temperature data from Question 5, what is the median temperature?

- A. 45°F                       C. 48°F  
 B. 50°F                       D. 46°F



5)

A circle graph is divided into 5 equal sections. Each section represents what percent?

- A. 20%                       C. 10%  
 B. 15%                       D. 25%

6) In a double-bar graph comparing boys and girls in different clubs, the art club shows 15 boys and 20 girls, music shows 12 boys and 18 girls, and sports shows 25 boys and 22 girls.

In how many clubs do girls have more members than boys?

- A. 0 clubs                       C. 2 clubs  
 B. 1 club                       D. 3 clubs

7) Find the LCM of 12 and 15 using the table below.

Multiples of 12	12	24	36	48	60	72
Multiples of 15	15	30	45	60	75	90

- A. 30                       C. 48  
 B. 36                       D. 60



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1) Write an expression for “a number  $b$  more than 12”.

A.  $12 - b$

C.  $12b$

B.  $b - 12$

D.  $12 + b$

2) Two students see the same ratio table. Student 1 says the ratio is 2 : 3. Student 2 says the ratio is 4 : 6. Who is correct?

Cats	Dogs
4	6
8	12

 A. Student 1 only C. Both are correct B. Student 2 only D. Neither is correct

3) Write 0.005 as a percent.

 A. 0.5% C. 50% B. 5% D. 500%

4) A swimming pool charges \$5 per person to enter. Complete the sentence: The relationship between the number of people and the total cost is proportional because...

 A. ...the cost stays \$5 no matter how many people enter C. ...there is a one-time starting fee B. ...the ratio of cost to people is constant D. ...the cost stays the same as more people enter

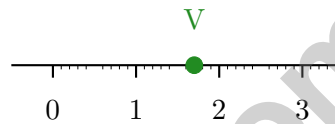
5) What is the prime factorization of 36?

- A.  $2 \times 18$                        C.  $4 \times 9$   
 B.  $2^2 \times 3^2$                        D.  $6 \times 6$

6) Which option correctly identifies all expressions shown that are equivalent to  $40 + 24$ ?

- A.  $8(5 + 3)$                        C.  $2(20 + 12)$   
 B.  $4(10 + 6)$                        D. All of the above

7) The number line below shows tick marks at tenths. Which decimal is at point V?



- A. 1.5                       C. 1.7  
 B. 1.6                       D. 1.8

8) Which statement BEST describes a statistical question?

- A. It has a single, definite answer.                       C. It is asked only once per year.  
 B. It involves a very large number of people.                       D. It anticipates variability and is answered by collecting data.

9) Two box plots represent Class A and Class B. Both have the same median, but Class A has a smaller box. What does this tell us about Class A?

- A. Class A has a higher average score.                       C. Class A has all higher scores.  
 B. Class A has less variability in the middle 50% of data.                       D. Class A's median is not reliable.



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## 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 six printed SOL tests with prepared, precise, and ready for the next challenge habits.

### Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(6.MG.2)**  $A = \frac{1}{2} \times 13 \times 6 = 39 \text{ m}^2$ .
- 2) **Choice C is correct.** **(6.PFA.4)** Selling means subtract from the total:  $f - 25$  fish remain.
- 3) **Choice A is correct.** **(6.PFA.3)** Subtract 6 from both sides to isolate  $x$ . So  $x = 13 - 6$ .
- 4) **Choice C is correct.** **(6.PFA.4)**  $2 \times 3 = 6$ . We have  $1 + 1 = 2$  decimal places, so 0.06 is correct.
- 5) **Choice A is correct.** **(6.PFA.2)** On a number line,  $-8$  is to the left of  $-4$ , so  $-8 < -4$ . The student confused absolute value magnitudes with signed comparisons. The correct inequality is  $-4 > -8$ .
- 6) **Choice B is correct.** **(6.PFA.4)** Absolute value is defined as the distance from zero, which is always non-negative (positive or zero).
- 7) **Choice B is correct.** **(6.MG.3)** Reflect  $(6, -4)$  across the  $x$ -axis:  $(6, 4)$ . Then reflect across the  $y$ -axis:  $(-6, 4)$ .
- 8) **Choice A is correct.** **(6.PFA.2)**  $-B = -4$  and  $-A = -1$ . Since  $-4 < -1 < 0$ , the order is  $-B < -A < 0$ .
- 9) **Choice D is correct.** **(6.NS.3)** Parentheses:  $4 - 1 = 3$ . Exponent:  $2^2 = 4$ . Multiply:  $3 \times 4 = 12$ . Subtract:  $12 - 1 = 11$ .
- 10) **Choice B is correct.** **(6.CE.2)** "The difference of  $t$  and 3" starts with  $t$ , so we compute  $t - 3$ . Order matters:  $3 - t$  gives a different result.
- 11) **Choice D is correct.** **(6.CE.2)** "Cannot go below" means the price must be at least:  $p \geq 2.50$ .
- 12) **Choice D is correct.** **(6.PFA.4)** "Greater than or equal to" uses the  $\geq$  symbol, so the inequality is  $x \geq -5$ .
- 13) **Choice C is correct.** **(6.MG.3)** Length =  $7 - 1 = 6$  units; width =  $4 - 1 = 3$  units. Perimeter =  $2(6 + 3) = 18$  units.
- 14) **Choice B is correct.** **(6.MG.3)** Area of a trapezoid =  $\frac{1}{2}(b_1 + b_2) \times h = \frac{1}{2}(10 + 8) \times 5 = \frac{1}{2} \times 18 \times 5 = 45$  square units.
- 15) **Choice A is correct.** **(6.MG.1)** A 5-square net (center + 4 adjacent) needs exactly 1 more face. Attaching it to any of the outer edges of the 4 surrounding squares will complete a valid cube net (e.g., a T-shape or an extended cross).
- 16) **Choice D is correct.** **(6.MG.3)** The  $x$ -coordinate stays the same; only the  $y$ -coordinate changes sign. This is reflection over the  $x$ -axis.
- 17) **Choice D is correct.** **(6.PS.1)** The population being targeted is the class itself. Although only some students may be measured (the sample), the question is about the entire class (the population).
- 18) **The correct answer is 11.** **(6.PFA.2)** Combine  $y$  terms:  $8y - 2y + 5y = 11y$ .
- 19) **The correct answer is 14.** **(6.PFA.4)** Multiply  $2 \times 7 = 14$ .
- 20) **The correct answer is A uses the division method; E verifies the answer..** **(6.CE.1)** A correctly divides:  $4 \div \frac{1}{3} = 12$  bottles. E checks:  $12 \times \frac{1}{3} = 4$  gallons. B multiplies but gets total juice, not bottle count. C divides backwards. D is conceptually sound but cumbersome.
- 21) **Choice A is correct.** **(6.PS.1)** The median is the middle value and is not affected by how extreme outliers are. The mean is pulled by outliers; range includes them; mode may or may not be.
- 22) **Choice D is correct.** **(6.PS.2)** If the original mean is 20, the sum is  $5 \times 20 = 100$ . Multiplying each by 3 gives a new sum of 300, and new mean =  $\frac{300}{5} = 60$ .
- 23) **Choice C is correct.** **(6.PS.2)** Both classes have the same mean, but Class A has a lower MAD (4 vs. 7), indicating less variability and more consistent performance.
- 24) **The correct answer is 8.** **(6.MG.2)** Using  $A = b \times h$ :  $96 = b \times 12$ , so  $b = 8$  m.
- 25) **Choice B is correct.** **(6.PS.1)** The bar for 1–2 inches has height 8, which is the highest frequency.
- 26) **Choice B is correct.** **(6.PFA.2)** When the median is closer to  $Q_1$ , the upper half of the data ( $Q_3$  to median to  $Q_1$ ) spreads out more, indicating a right skew. This means there are higher values pulling the distribution rightward.



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## Hi, Math Athlete!

◇ 6 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](mailto:jay@testinar.com).

**Jay Daie**

Your Math Trainer

# PRACTICE 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 6 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.

6  
PRINTED  
TESTS

+  
2  
ONLINE  
TESTS

## PERFECT FOR:

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

★ BUILD SKILLS.  
GAIN CONFIDENCE.  
SUCCEED!

## 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.



6 FULL-LENGTH  
PRINTED TESTS



2 ONLINE  
PRACTICE TESTS



DETAILED ANSWER  
EXPLANATIONS