5 Full-Length Virginia SOL Grade 7 Math Practice Tests

Extra Practice for Test Day Success

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Published by View Math Education
ViewMath.com

THE EXPLORER'S JOURNAL

5 Practice Tests

Grade 7 Math — Chart Your Path

Welcome, math explorer!

*This journal holds **5 full expeditions** across the entire landscape of Grade 7 math. From the peaks of proportional reasoning to the valleys of negative numbers, every trail is mapped and waiting for you.*

- ***Trail 1–2:*** *Scout the terrain at your own pace*
- ***Trail 3–4:*** *Push deeper with timed conditions*
- ***Trail 5:*** *Summit the mountain — full test simulation*

Every great explorer starts with a single step.
Yours starts on the next page.

> *Five trails gives you the journey every explorer needs: discover, practice, and conquer. Pack your pencils — the expedition begins!*

Trail Guide

Your route map for 5 math expeditions

What's in This Journal

- ***5 Full-Length Practice Tests*** *— each trail covers all 9 domains of Grade 7 math, from ratios and proportional relationships to probability and compound events.*
- ***Step-by-Step Answer Explanations*** *— not just answers, but a guided walkthrough of every solution path.*
- ***Expedition Log*** *— chart your scores, note tricky terrain, and celebrate the trails you've conquered.*

Your 5-Trail Itinerary

Spread your trails over several weeks for the best journey:

Week 1: *Trail 1 — untimed. Explore the landscape. Mark unfamiliar territory.*

Week 2: *Study the rough terrain from Trail 1. Then attempt Trail 2 (soft timer).*

Week 3: *Trail 3 — timed (65 min). Compare with Trail 1 to see growth.*

Week 4: *Focus on weak spots. Trail 4 — timed. Practice showing all work.*

Week 5: *Trail 5 — full conditions. The summit attempt!*

Multiple Choice

Navigate four options and select the best path. Eliminate wrong answers first — like crossing streams off a map.

Explorer's tip: *Work the problem yourself before reading the choices.*

Constructed Response

Show every calculation, label every unit, and explain your reasoning. Like a field journal, your work tells the full story.

Explorer's tip: *Even a partial trail earns credit. Never leave it blank.*

Survival Skills

Essential navigation strategies for every trail

The Four-Point Compass

↑ N — Note the key info

Circle numbers. Underline the question.

← W — Weigh your answer

Does it match the question and estimate?

→ E — Estimate first

Get a ballpark answer before solving.

↓ S — Solve step by step

Write equations. Show every operation.

Grade 7 Terrain Warnings

- ***Negative numbers:*** *Watch signs when multiplying and dividing rational numbers.*
- ***Proportions:*** *Make sure both ratios compare the same quantities in the same order.*
- ***Percent problems:*** *Identify whether you need the part, the whole, or the percent.*
- ***Geometry:*** *Label all measurements and don't confuse area with perimeter, or surface area with volume.*
- ***Probability:*** *Read whether the question asks for theoretical or experimental probability.*

Pacing Your Trek

- *Trails 1–2: Untimed (explore freely)*
- *Trails 3–4: Timed (65 minutes)*
- *Trail 5: Strict test conditions*
- *Don't sprint — steady pace wins*

After Each Trail

- *Read every answer explanation*
- *Mark the topic, not just the question*
- *Log your results in the Expedition Log*
- *Study rough terrain before the next trail*

"The best explorers don't avoid rough terrain — they study it. Every wrong answer is a trailhead to a deeper understanding. Follow those paths."

Math Reference Sheet

You may use this page during your practice tests!

Symbol	Name	What It Means	
$(\ )$	Parentheses	Do this part first.	$(3+4) \times 2 = 14$
10^3	Exponent	Multiply the base by itself that many times. $10^3 = 1{,}000$	
$\frac{a}{b}$	Fraction	a parts out of b equal parts; also means $a \div b$.	
$\frac{7}{3}$	Improper Fraction	Numerator $\geq$ denominator.	$\frac{7}{3} = 2\frac{1}{3}$
0.45	Decimal	A number with a decimal point.	$0.45 = \frac{45}{100}$
$> \ < \ =$	Comparison	Greater than, less than, equal to.	$0.5 > 0.35$
$(3{,}5)$	Ordered Pair	A point on the coordinate plane: (x, y).	

Key Formulas

- ***Volume of a rectangular prism:***
  $V = l \times w \times h$
- ***Order of operations:***
  Parentheses $\rightarrow$ *Exponents* $\rightarrow$ *Multiply/Divide* $\rightarrow$ *Add/Subtract*
- ***Powers of 10:***
  $10^1 = 10 \quad 10^2 = 100$
  $10^3 = 1{,}000 \quad 10^4 = 10{,}000$
- ***Fraction as division:***
  $\frac{a}{b} = a \div b$

Place Value Chart

Millions	1,000,000
Hundred-Thousands	100,000
Ten-Thousands	10,000
Thousands	1,000
Hundreds	100
Tens	10
Ones	1

Decimals

Tenths	0.1
Hundredths	0.01
Thousandths	0.001

*Each place is **10**× the place to its right, and $\frac{1}{10}$ of the place to its left.*

Key Math Vocabulary

- ***Sum*** — *the result of addition*
- ***Difference*** — *the result of subtraction*
- ***Product*** — *the result of multiplication*
- ***Quotient*** — *the result of division*
- ***Remainder*** — *what's left over after dividing*
- ***Factor*** — *a number you multiply*
- ***Expression*** — *numbers and operations without* $=$
- ***Equation*** — *a math sentence with* $=$
- ***Numerator*** — *the top number of a fraction*
- ***Denominator*** — *the bottom number of a fraction*
- ***Mixed number*** — *a whole number + a fraction*
- ***Equivalent fractions*** — *fractions with equal value*
- ***Decimal*** — *a number written with a decimal point*
- ***Volume*** — *the space inside a 3D shape*
- ***Coordinate plane*** — *a grid with* x *and* y *axes*
- ***Ordered pair*** — (x, y) *location on the plane*

Word Problem Clue Words

- ***Add*** $(+)$*: total, altogether, combined, sum, increase, more than*
- ***Subtract*** $(-)$*: difference, how many more, fewer, remain, decrease, left*
- ***Multiply*** $(\times)$*: each, every, groups of, times, product, per, of (with fractions)*
- ***Divide*** $(\div)$*: share equally, split, each group, how many groups, quotient, per*

Contents

Practice Test 1 1

PRACTICE TEST

1

Practice Test 1

30 Questions

Before You Start

- **Read each question carefully** before choosing your answer.
- **Show your work** on scratch paper when you need to.
- **Skip hard questions** and come back to them later.
- **Check your answers** when you're done.
- **Take your time** — there's no rush!

You've Got This!

Do your best and show what you know!

1. *A car travels 55 miles per hour. Which equation gives the distance d for t hours?*

(A) $d = t + 55$ (B) $d = 55t$

(C) $t = 55d$ (D) $d = \frac{55}{t}$

2. *14 is what percent of 56?*

(A) 14% (B) 20%

(C) 25% (D) 28%

3. *Which proportion shows that 42 is 60% of some number w?*

(A) $\frac{42}{w} = \frac{60}{100}$ (B) $\frac{w}{42} = \frac{60}{100}$

(C) $\frac{60}{42} = \frac{w}{100}$ (D) $\frac{42}{60} = \frac{w}{100}$

4. *Miranda says that a 50% increase followed by a 50% decrease gives back the original price. Is she correct?*

(A) *Yes, because the two changes cancel out* (B) *No, the result is less than the original*

(C) *No, the result is more than the original* (D) *It depends on the starting price*

5. *A student estimated a hallway was 60 meters long. The actual length was 50 meters. What is the percent error?*

(A) 10% (B) 16.7%

(C) 20% (D) 25%

6. A football team has the following plays: gain 7 yards, lose 3 yards, lose 5 yards, gain 2 yards. What is the net yardage?

Your Answer:

7. The table shows daily high temperatures for a city.

Day	High Temp (°F)
Monday	-3
Tuesday	8
Wednesday	-5

What is the difference between Tuesday's and Wednesday's temperatures?

(A) $3°F$

(B) $-3°F$

(C) $13°F$

(D) $-13°F$

8. A recipe calls for $1\frac{3}{4}$ cups of flour. You already added $\frac{5}{8}$ cup. How much more flour do you need?

Your Answer:

9. Expand $5(2a - 3)$.

(A) $10a - 3$

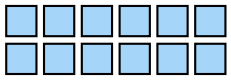
(B) $7a - 3$

(C) $10a - 15$

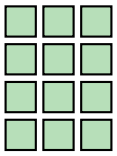
(D) $10a + 15$

10. *The arrays below show how 12 tiles can be arranged. Which arrangement shows that $12 = 4 \times 3$?*

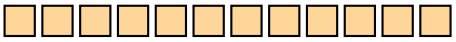
A: 2×6



B: 4×3



C: 1×12



(A) *Arrangement A*

(B) *Arrangement B*

(C) *Arrangement C*

(D) *All three arrangements*

11. *Solve* $\frac{2x}{5} - 1 = 3$.

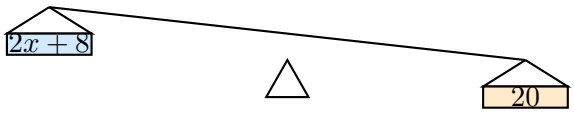
(A) $x = 5$

(B) $x = 10$

(C) $x = 4$

(D) $x = 20$

12. *The balance scale tips to the left. Write and solve the inequality that describes this situation.*



Your Answer:

13. *Which inequality matches the graph below?*

(A) $x \leq 1$

(B) $x < 1$

(C) $x \geq 1$

(D) $x > 1$

14. *A floor plan uses the scale 1 cm $= 2$ m. A closet measures 1.5 cm by 1 cm on the plan. What is the actual area?*

(A) $1.5\ m^2$

(B) $3\ m^2$

(C) $6\ m^2$

(D) $12\ m^2$

15. *A drawing uses 1 cm $= 6$ m. It is redrawn at 1 cm $= 2$ m. The original drawing is 8 cm by 5 cm. What is the perimeter of the new drawing?*

(A) 26 cm

(B) 39 cm

(C) 78 cm

(D) 120 cm

16. *A pyramid with a square base is sliced with a horizontal cut near the top. What shape is the cross-section?*

(A) A very small square

(B) A triangle

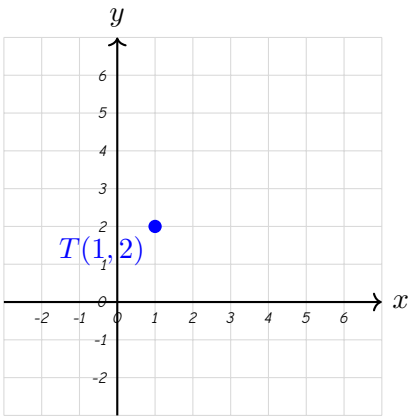
(C) A point

(D) A circle

17. *Find the complement of $67°$.*

Your Answer:

18. *Point T is shown on the coordinate plane. It is translated right 3 and up 4. Where is T'?*



(A) $(4, 6)$ (B) $(4, -2)$

(C) $(-2, 6)$ (D) $(1, 6)$

19. *Two similar triangles have corresponding sides 6 and 10. If the perimeter of the smaller triangle is 18 cm, what is the perimeter of the larger triangle?*

Your Answer:

20. *A composite shape is made of a rectangle that is 10 cm by 4 cm and a triangle with base 10 cm and height 3 cm attached to one side. What is the total area?*

(A) 40 cm^2 (B) 55 cm^2

(C) 70 cm^2 (D) 120 cm^2

21. *What is the surface area of a rectangular prism with length 5 cm, width 3 cm, and height 2 cm?*

(A) 30 cm^2 (B) 62 cm^2

(C) 46 cm^2 (D) 31 cm^2

22. *A sandbox is 6 ft long, 4 ft wide, and 1 ft deep. Sand costs $\$2$ per cubic foot. How much does it cost to fill the sandbox?*

(A) $\$12$

(B) $\$24$

(C) $\$48$

(D) $\$96$

23. *Find the surface area of a cylinder with radius 4 cm and height 9 cm. Use $\pi \approx 3.14$.*

Your Answer:

24. *Which sampling method is most likely to produce a representative sample of a school's students?*

(A) *Survey students in the cafeteria during lunch*

(B) *Survey every fifth student on an alphabetical class list*

(C) *Survey students who volunteer to participate*

(D) *Survey only students in honors classes*

25. *Data set: $4, 6, 7, 8, 10$. The mean is 7. Find the MAD.*

Your Answer:

26. *Explain one advantage of using IQR instead of range to describe the spread of a data set.*

Your Answer:

27. *A student reads $4 \mid 7$ from a stem-and-leaf plot and says the value is 74. What did the student do wrong?*

(A) *The student added the digits*

(B) *The student reversed the stem and leaf*

(C) *The student multiplied the digits*

(D) *Nothing — 74 is correct*

28. *In 100 spins of a spinner, red appears 22 times, blue appears 48 times, and green appears 30 times. Which color has an experimental probability closest to $\frac{1}{2}$?*

(A) *Red*

(B) *Blue*

(C) *Green*

(D) *Red and Green are equally close*

29. *Two dice are rolled. What is the probability that the sum is 10 or greater? Write your answer as a fraction in simplest form.*

Your Answer:

30. *The table shows a simulation using random digits 0–9 to model a 30% chance of rain. Digits 0, 1, 2 represent rain. Based on the 10 trials below, what is the experimental probability of rain?*

Trial	*Digit*	*Rain?*
1	5	*No*
2	1	*Yes*
3	8	*No*
4	0	*Yes*
5	3	*No*
6	7	*No*
7	2	*Yes*
8	9	*No*
9	4	*No*
10	6	*No*

(A) $\frac{2}{10} = 0.20$

(B) $\frac{3}{10} = 0.30$

(C) $\frac{4}{10} = 0.40$

(D) $\frac{7}{10} = 0.70$

End of Practice Test 1

Great job finishing the test!

My Score

I got _____ out of 30 questions right.

*Check your answers in the **Answer Key** at the back of the book.*

Review any questions you missed. That's how we learn!

THANK YOU

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