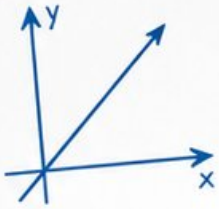
6 TENNESSEE TCAP

GRADE 7 MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs

$y = mx + b$



$2(x - 3) = 4x + 6$

6 PRINTED TESTS

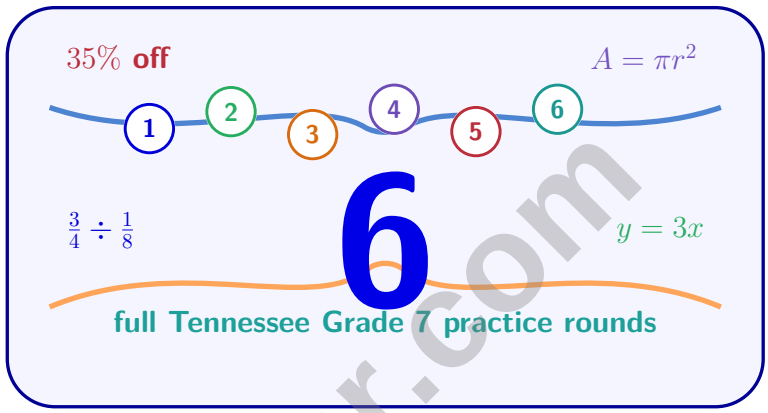
2 ONLINE TESTS

USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS
FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.

- Build Confidence
- Strengthen Math Skills
- Detailed Answers & Explanations
- Improve Test Performance

6 Tennessee TCAP Grade 7 Math Practice Tests

TCAP-Aligned Practice with Review and Answer Keys



Six complete 40-question Grade 7 TCAP practice rounds with proportional relationships, percents, rational numbers, expressions, equations, geometry, statistics, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari

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Welcome, Tennessee Grade 7 Problem Solver!

Six focused rounds for sharper TCAP math thinking

This book gives you six full Grade 7 TCAP math practice tests. Each round is built to help you notice structure, compare quantities, use proportional reasoning, handle rational numbers, and explain your thinking with care.

Your Tennessee Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

How to Use This Book

A six-session plan for confident Grade 7 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot a proportion, equation, diagram, number line, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

Tennessee review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.

What Is Inside?

Six TCAP tests, 240 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 4–6	Expressions, equations, inequalities, scale drawings, geometry, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.

Table of Contents

1) A scalene triangle has one angle of 100°. What can be said about the other two angles?

☐ A. Both are less than 90°
☐ B. Both are greater than 50°
☐ C. One is greater than 40° and one is less than 40°
☐ D. At least one is less than 50°

2) A basketball player made 18 out of 24 free throws. Use a proportion to find the percent made, then identify which step comes next.

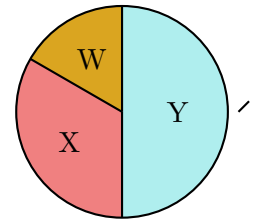
☐ A. Multiply 18×24 and divide by 100
☐ B. Set up $\frac{24}{18} = \frac{100}{p}$ and cross-multiply
☐ C. Calculate $18 + 24 = 42$ and divide by 2
☐ D. Set up $\frac{18}{24} = \frac{p}{100}$ and solve using $p = \frac{18 \times 100}{24}$

3) Two similar rectangles have a scale factor of 2.5. The smaller rectangle has a perimeter of 16 inches. What is the perimeter of the larger rectangle?

4) A phone company charges \$20 per month plus \$0.15 for each text message over the limit. If Marcus pays \$35.60 in a month, which equation could be used to find n, the number of text messages over the limit?

☐ A. $0.15n + 20 = 35.60$
☐ B. $20n + 0.15 = 35.60$
☐ C. $20 + 35.60 = 0.15n$
☐ D. $0.15 + 20n = 35.60$

5)



The spinner above has 3 sections. Section W is $\frac{1}{6}$ of the circle, section X is $\frac{1}{3}$ of the circle, and section Y is the remaining part. If the spinner is spun 60 times, approximately how many times would you expect to land on section Y?

- ☐ A. 10 times
- ☐ B. 20 times
- ☐ C. 30 times
- ☐ D. 40 times

6) A student claims that if a cylinder has twice the radius and half the height of another cylinder, the volumes will be equal. Is this claim true or false? Use $\pi \approx 3.14$.

- ☐ A. True, because $2r$ and $\frac{h}{2}$ cancel out
- ☐ B. False, the first cylinder has a larger volume
- ☐ C. False, the second cylinder has a larger volume
- ☐ D. True, only if $r = h$

7) A survey asks: "How many hours did you study for math?" This is a:

- ☐ A. Biased question
- ☐ B. Neutral question
- ☐ C. Leading question
- ☐ D. Voluntary response question

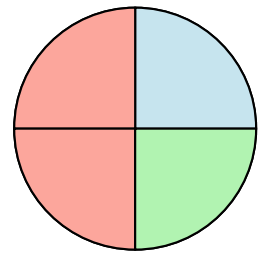
8) A class took two different exams. Exam 1: median = 78. Exam 2: median = 78. Exam 1 range = 25. Exam 2 range = 8. What can we infer?

- ☐ A. Exam 1 was harder
- ☐ B. Exam 2 had more consistent student performance
- ☐ C. Students performed identically on both exams
- ☐ D. Exam 1 was easier

9) A dot plot shows the number of goals scored by soccer players: 2 (two players), 3 (three players), 4 (four players), 5 (two players), 6 (one player). What is the mean number of goals?

☐ A. 3.5 goals
☐ B. 3.8 goals
☐ C. 4 goals
☐ D. 5.5 goals

10)



A spinner has four equal sections: one blue, two red, and one green. What is the probability of spinning red?

☐ A. $\frac{1}{4}$
☐ B. $\frac{1}{2}$
☐ C. $\frac{2}{3}$
☐ D. $\frac{3}{4}$

11) A clothing store sells shirts in 3 fits (Slim, Regular, Loose) and 5 sizes (XS, S, M, L, XL). If a customer randomly picks one fit and one size, what is the probability of selecting Regular and Large?

☐ A. $\frac{1}{5}$
☐ B. $\frac{1}{15}$
☐ C. $\frac{1}{8}$
☐ D. $\frac{2}{15}$

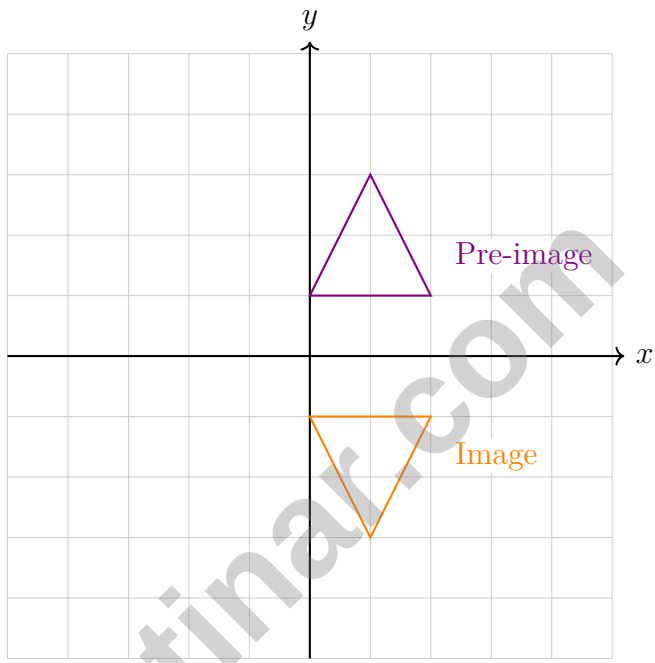
12) Three coins are flipped. What is the probability of getting at least one head?

☐ A. $\frac{1}{8}$
☐ B. $\frac{3}{8}$
☐ C. $\frac{6}{8}$
☐ D. $\frac{7}{8}$

1) A vendor receives $\$2,400$ after paying a 20% commission to a platform. What was the original sale amount before the commission was deducted?

☐ A. $\$2,880$
☐ B. $\$4,200$
☐ C. $\$3,200$
☐ D. $\$3,000$

2)



Which transformation maps the purple triangle to the orange triangle?

☐ A. Reflection over the x-axis
☐ B. Reflection over the y-axis
☐ C. Translation by $(0, -2)$
☐ D. Rotation of $90°$ clockwise

3) A histogram displays the ages of people at a gym: 10–20 (8 people), 20–30 (14 people), 30–40 (18 people), 40–50 (12 people), 50–60 (8 people). What is the total number of people at the gym?

4) A student's math score on a pretest was 65 points. On the posttest after tutoring, the score was 78 points. What is the percent increase?

☐ A. 13%
☐ B. 16.7%
☐ C. 20%
☐ D. 83.3%

5) In a compound experiment, you draw a letter from {A, E, I} and select a number from 1 to 4. How many outcomes are in the sample space?

☐ A. 7
☐ B. 9
☐ C. 12
☐ D. 16

6) In a school, 30% of students play soccer and 25% play basketball. If 5% play both, what is the probability a student plays soccer OR basketball?

☐ A. 0.55
☐ B. 0.50
☐ C. 0.40
☐ D. 0.35

7) If the probability of rolling a 3 on a die is $\frac{1}{6}$, what is the probability of NOT rolling a 3?

8) A runner estimated she would cover 5.5 miles but actually covered 6 miles. What is the percent error?

☐ A. 5%
☐ B. 91.7%
☐ C. 9.1%
☐ D. 8.3%

1) Solve for y: $2y - 8 = -14$ and check your answer makes sense.

☐ A. $y = -3$
☐ B. $y = 0$
☐ C. $y = 3$
☐ D. $y = 11$

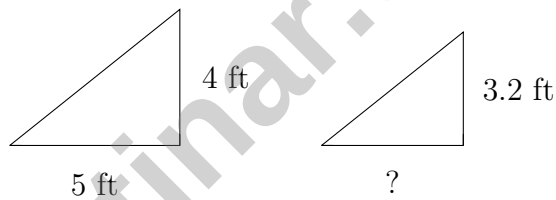
2) A map has a scale of 2 cm : 3 km. If two towns are 10 cm apart on the map, how far apart are they in reality?

☐ A. 12 km
☐ B. 15 km
☐ C. 18 km
☐ D. 20 km

3) Angle P and angle Q are vertical angles. If angle $P = 84°$, what is the measure of angle Q?

☐ A. 6°
☐ B. 96°
☐ C. 276°
☐ D. 84°

4)



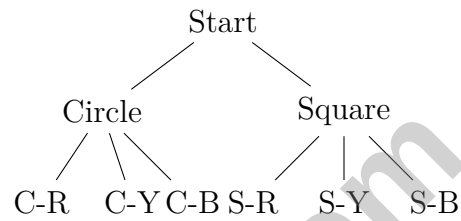
Two similar right triangles are shown. The left triangle has legs 5 ft (horizontal) and 4 ft (vertical). The right triangle has a vertical leg of 3.2 ft. Find the horizontal leg of the right triangle.

☐ A. 2.56 ft
☐ B. 3.2 ft
☐ C. 4 ft
☐ D. 5 ft

5) A spinner has 10 equally-sized sections. 4 are labeled "Red", 3 are labeled "Blue", and 3 are labeled "Yellow". What is the probability of spinning Blue?

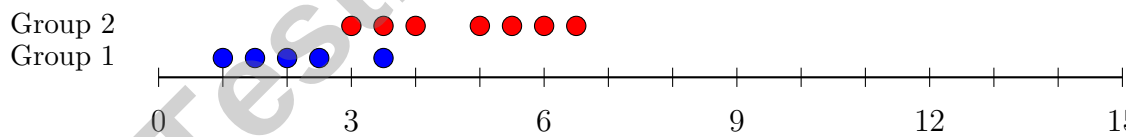
☐ A. $\frac{3}{10}$
☐ B. $\frac{1}{3}$
☐ C. $\frac{4}{10}$
☐ D. $\frac{3}{7}$

6) A tree diagram shows all outcomes for selecting a shape (Circle or Square) and a color (Red, Yellow, or Blue). How many final branches should the tree have?



☐ A. 2 branches
☐ B. 3 branches
☐ C. 5 branches
☐ D. 6 branches

7) The dot plots below show the number of text messages sent by two groups of students during a school day.



Which group has a higher center (median)?

☐ A. Group 1
☐ B. Group 2
☐ C. Both groups have the same median
☐ D. Cannot be determined from the plot

Tennessee TCAP Grade 7 Practice Test Answer Keys

How to use this section with a Grade 7 student:

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next Tennessee TCAP practice test.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice D is correct.** 7.G.1-7.G.5 The sum of the other two angles is $180° - 100° = 80°$. If both were at least 50°, their sum would exceed 100°. Therefore, at least one must be less than 50°.
2) **Choice D is correct.** 7.RP.3 The correct proportion is part over whole equals percent over 100: $\frac{18}{24} = \frac{p}{100}$. Cross-multiply: $p = 75\%$.
3) **The correct answer is** 40 **.** 7.G.1-7.G.5 Perimeter scales linearly by the scale factor. Larger perimeter $= 16 \times 2.5 = 40$ inches.
4) **Choice A is correct.** 7.EE.4a Base charge is \$20; each extra text adds \$0.15. So $0.15n + 20 = 35.60$.
5) **Choice C is correct.** 7.SP.5-7.SP.8 W: $\frac{1}{6}$, X: $\frac{1}{3} = \frac{2}{6}$, Y: $1 - \frac{1}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$. Expected frequency: $\frac{1}{2} \times 60 = 30$.
6) **Choice B is correct.** 7.G.4-7.G.6 Original: $V_1 = \pi r^2 h$. Modified: $V_2 = \pi(2r)^2(\frac{h}{2}) = \pi \times 4r^2 \times \frac{h}{2} = 2\pi r^2 h = 2V_1$. The first cylinder has twice the volume.
7) **Choice B is correct.** 7.SP.1-7.SP.4 This question is straightforward and doesn't suggest any particular answer. It is neutral because it simply asks for factual information without bias.
8) **Choice B is correct.** 7.SP.1-7.SP.4 Same median (78) but Exam 2's smaller range (8 vs. 25) indicates students' scores were clustered more tightly, showing more consistent performance.
9) **Choice B is correct.** 7.SP.1-7.SP.4 Sum $= 2(2) + 3(3) + 4(4) + 5(2) + 6(1) = 4 + 9 + 16 + 10 + 6 = 45$. Count $= 12$. Mean $= \frac{45}{12} \approx 3.75 \approx 3.8$ goals.
10) **Choice B is correct.** 7.SP.5-7.SP.8 Red sections: 2 out of 4. $P(\text{red}) = \frac{2}{4} = \frac{1}{2}$.
11) **Choice B is correct.** 7.SP.5-7.SP.8 Total outcomes: $3 \times 5 = 15$. Favorable (Regular and Large): 1 outcome. Probability: $\frac{1}{15}$.
12) **Choice D is correct.** 7.SP.5-7.SP.8 Easier using complement: $P(\text{at least one head}) = 1 - P(\text{all tails}) = 1 - \frac{1}{8} = \frac{7}{8}$.
13) **Choice B is correct.** 7.SP.6 Experimental probability $= \frac{92}{400} = 0.23$. Distractors represent nearby decimal values that students might compute incorrectly.
14) **Choice C is correct.** 7.SP.1-7.SP.4 Single-digit stems needed: 2 (for 28) through 9 (for 94). That's stems $2, 3, 4, 5, 6, 7, 8, 9 = 8$ stems.
15) **Choice B is correct.** 7.SP.5-7.SP.8 Every number from 1 to 10 is less than 11, so this event is certain (probability $= 1$).
16) **The correct answer is** 125.6 **.** 7.G.4-7.G.6 Circumference $= 2\pi r = 2 \times 3.14 \times 5 = 31.4$ m. Distance $= 4 \times 31.4 = 125.6$ m.
17) **Choice D is correct.** 7.RP.3 Percent error $= \frac{|48-60|}{60} \times 100\% = \frac{12}{60} \times 100\% = 20\%$.
18) **Choice A is correct.** 7.EE.1-7.EE.2 Distribute -4: $-4(3b) - 4(2) = -12b - 8$.
19) **Choice B is correct.** 7.NS.1-7.NS.3 When we subtract a negative number, we are undoing a debt or reversing a loss. This is why $6 - (-3) = 6 + 3 = 9$, which is both positive and larger than the original 6. Choice B directly addresses this conceptual reasoning.
20) **Choice D is correct.** 7.RP.3 $20 = 250 \times 0.04 \times t \Rightarrow 20 = 10t \Rightarrow t = 2$ years. Convert to months: $2 \times 12 = 24$ months.
21) **The correct answer is A,D.** 7.G.1-7.G.5 (A) $(1, 0) \xrightarrow{90°\,CCW} (0, 1) \xrightarrow{\text{reflect } x\text{-axis}} (0, -1)$. ✓ (B) $(2, 3) \xrightarrow{90°\,CCW} (-3, 2) \xrightarrow{\text{reflect } x\text{-axis}} (-3, -2)$—mathematically correct but not asked. (C) The composite is NOT equivalent to 90° clockwise (that would be $(y, -x)$, giving $(0, -1)$ for $(1, 0)$, which matches by coincidence, but try $(2, 3) \to (3, -2)$ for 90° CW). (D) Both operations preserve distance from origin.
22) **The correct answer is** 10 **.** 7.G.4-7.G.6 From $A = \pi r^2$: $314 = 3.14 \times r^2 \Rightarrow r^2 = 100 \Rightarrow r = 10$ m.
23) **Choice C is correct.** 7.RP.1-7.RP.3 Multiply the map distance by the scale factor: $3.5 \times 50 = 175$ km.
24) **Choice C is correct.** 7.RP.3 Actual discount amount $= 125 - 100 = \$25$. Percent $= (25/125) \times 100 = 20\%$. (Not the intended 25% off).
25) **Choice C is correct.** 7.NS.1b Starting at floor -2 and moving up 9 floors: $-2 + 9 = 7$. The elevator reaches floor 7.
26) **Choice A is correct.** 7.EE.1 Combine: $(8 - 3 + 1)x + (5 - 2)y = 6x + 3y$.

Author's Note

A Page for Persistence

Hi, Persistent Problem Solver!

◇ Some Grade 7 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

⋆ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 6 full Grade 7 practice tests, and that repeated effort matters. ⋆

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 7 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 6 full-length Math practice tests and 2 online tests to help Grade 7 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.

THIS BOOK INCLUDES:

- 6 Full-Length Printed Tests
- 2 Online Practice Tests
- Detailed Answers & Explanations

MORE PRACTICE. GREATER RESULTS.

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN

Build Confidence
Practice regularly to feel prepared and test-ready.

Strengthen Math Skills
Develop key math concepts and problem solving abilities.

Improve Understanding
Learn with clear explanations and step-by-step solutions.

Test Confidence
Familiarize with test formats and improve accuracy and speed.

Boost Performance
Apply your knowledge and achieve your best score!

TOPICS COVERED

- Ratios & Proportions
- The Number System
- Expressions & Equations
- Geometry
- Percents & Decimals
- Statistics & Probability
- Data Analysis
- Measurement & Conversions
- Algebraic Thinking
- And More!

2 ONLINE TESTS

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

2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!

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PRACTICE REGULARLY | STAY FOCUSED | SOLVE CONFIDENTLY | SUCCEED BRIGHTLY