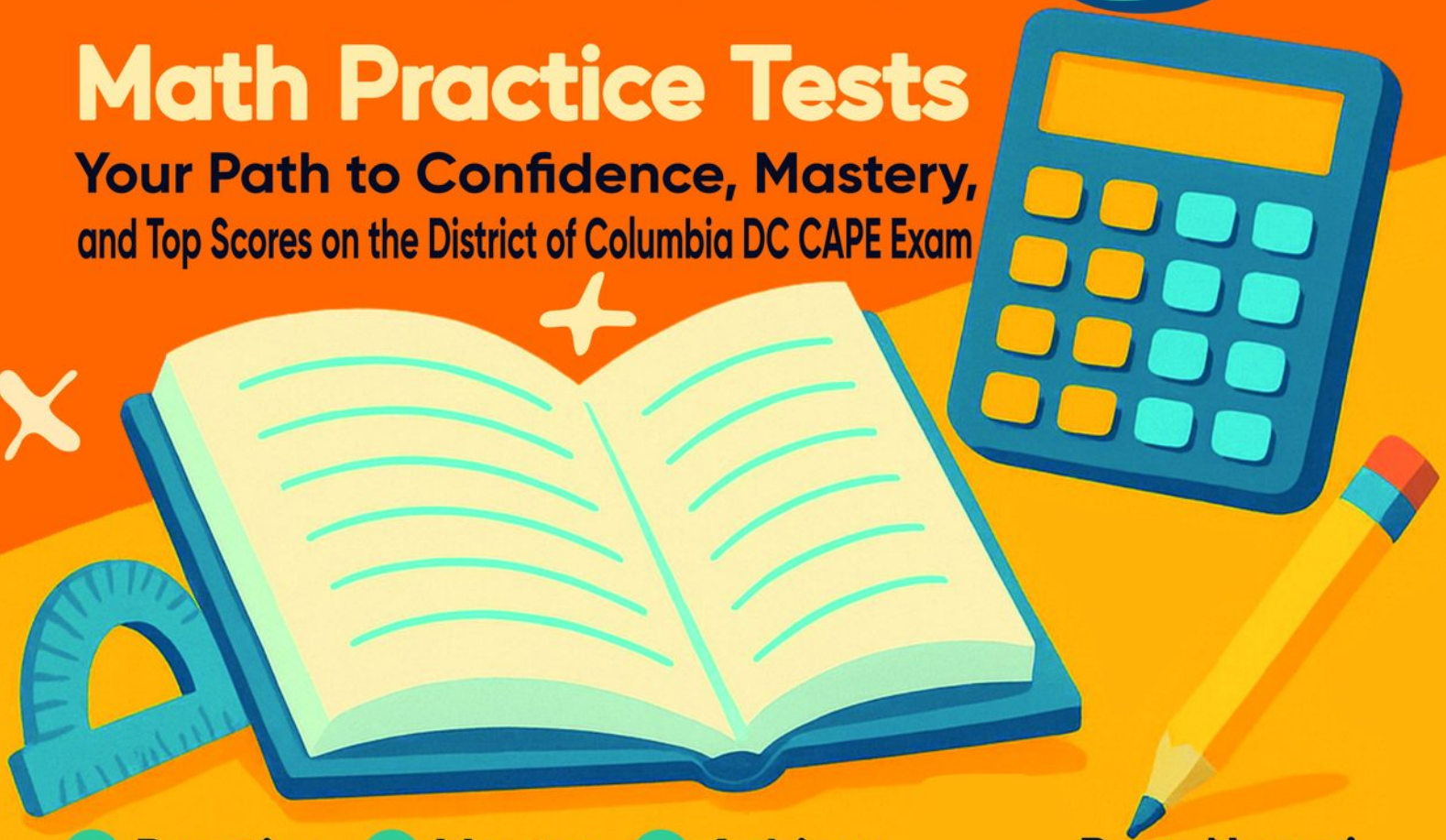
7 Full-Length District of Columbia DC CAPE Grade 8 Math Practice Tests

Your Path to Confidence, Mastery, and Top Scores on the District of Columbia DC CAPE Exam

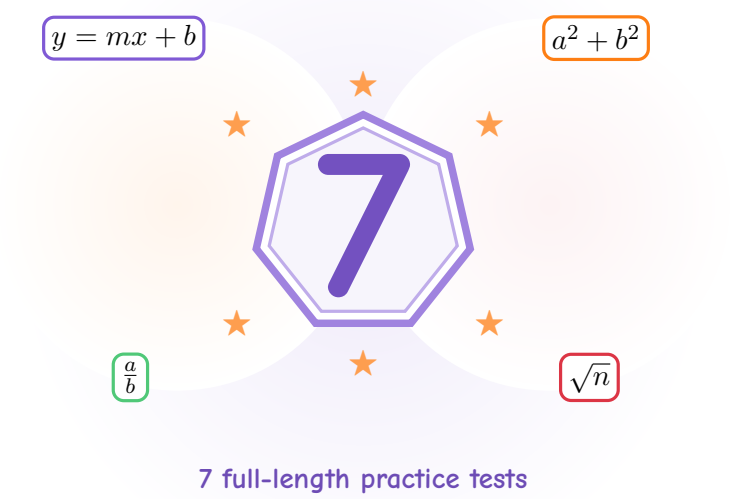


Practice Master Achieve

Reza Nazari

7 District of Columbia DC CAPE Grade 8 Math Practice Tests

Your Path to Confidence, Mastery, and Top Scores
on the District of Columbia DC CAPE Test



Reza Nazari

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Published by Effortless Math Education

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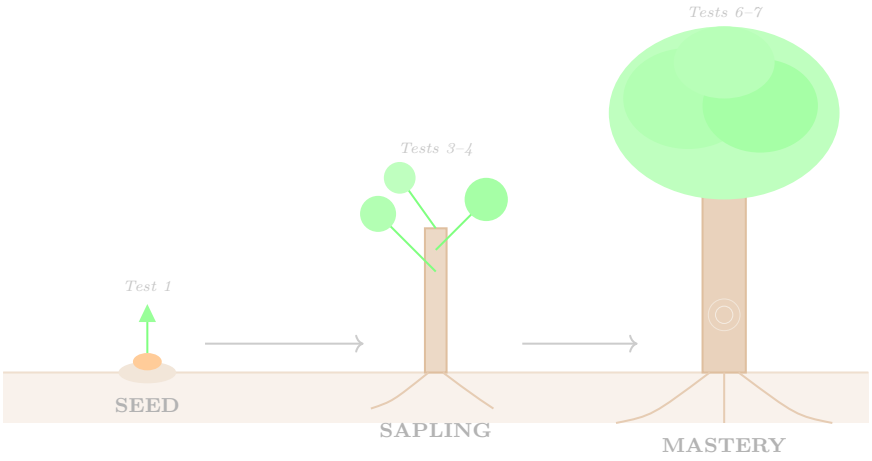
- Apply a reality test. A length cannot be negative, a probability must fall between 0 and 1, and a student's test score cannot exceed the total number of points.
- Confirm that you answered the precise question. If the problem asks for the *slope*, do not submit the y-intercept. If it asks for *both* coordinates, do not give only x.

Timeout Strategy

A basketball team calls a timeout when momentum shifts against them. Do the same on the test. If a problem stalls you for more than ninety seconds, mark it lightly, move to the next item, and return after you have answered everything else. Collecting easy points first builds both your score and your confidence for the harder items.

Grow Stronger with Every Test

Seven Principles Rooted in How the Brain Really Learns



The Science Behind "Yet"

Every time you wrestle with a challenging problem, your brain forms new neural pathways—even if you do not solve it on the first attempt. Cognitive scientists call this *productive struggle*. Replacing "I cannot" with "I cannot *yet*" is not simply optimism; it is an accurate description of a brain in the process of rewiring itself for success.

Seven Principles for Seven Tests

1. **Plant the Seed of Curiosity:** Before jumping into calculations, ask yourself *what* the problem is really about. Curiosity activates deeper processing in the brain, and deeper processing produces longer-lasting learning.

2. **Water It with Repetition:** Solving one practice test is useful. Solving seven is transformative. Each repetition strengthens the same neural connections until the skills become automatic—like riding a bicycle.

3. **Welcome the Storm:** Frustration is not a stop sign; it is a mile marker. The discomfort you feel on a hard problem is identical to the discomfort an athlete feels during a difficult workout. It means growth is happening.

4. **Prune What Does Not Work:** After each test, identify your weakest topic and devote focused study time to it *before* starting the next test. Targeted pruning produces the healthiest growth.

5. **Let the Roots Go Deep:** Memorizing a formula is surface-level. Understanding *why* it works is root-level. When you know that the Pythagorean theorem comes from the areas of squares on each side of a right triangle, you can reconstruct the formula even if you forget it momentarily.

6. **Stand Tall Under Pressure:** On test day, your body may feel nervous—a faster heartbeat, sweaty palms, a tight stomach. Reinterpret those signals: your body is preparing you for peak performance, not warning you of danger. Take one deep breath and proceed.

7. **Measure the Rings:** Just as a tree records each year of growth in its rings, you should record the score of each practice test. A rising trend across seven tests is the most convincing evidence of all: *you are ready.*

"A tree that is rooted in deep soil does not fear the wind."

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Grade 8 Math

Grade 8 Mathematics

1

Questions: 40 **Duration:** No time limit

Calculator Policy: You may use a basic calculator.

Important Test Information

Question Types:

- **Multiple Choice:** Choose the best answer from the four options (A, B, C, or D).
- **Open-Ended:** Write your complete answer in the space provided.
- **Select All That Apply:** Choose all answers that correctly answer the question.

Test-Taking Tips:

- Read each question carefully before answering.
- Check your answers before moving on.
- Use the formula sheet as needed.

Remember: Take your time, stay calm, and do your best. You've prepared well for this test—you've got this!

Grade 8 Mathematics Reference Materials

LINEAR EQUATIONS

Slope-intercept form	$y = mx + b$
Direct variation	$y = kx$
Slope of a line	$m = \frac{y_2 - y_1}{x_2 - x_1}$

CIRCUMFERENCE

Circle	$C = 2\pi r$ or $C = \pi d$

AREA

Triangle	$A = \frac{1}{2}bh$
Rectangle or parallelogram	$A = bh$
Trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$
Circle	$A = \pi r^2$

SURFACE AREA

	Lateral	Total
Prism	$S = Ph$	$S = Ph + 2B$
Cylinder	$S = 2\pi rh$	$S = 2\pi rh + 2\pi r^2$

VOLUME

Prism or cylinder	$V = Bh$ (where B is area of base)
Pyramid or cone	$V = \frac{1}{3}Bh$ (where B is area of base)
Sphere	$V = \frac{4}{3}\pi r^3$

ADDITIONAL INFORMATION

Pythagorean theorem	$a^2 + b^2 = c^2$
Simple interest	$I = Prt$
Compound interest	$A = P(1 + r)^t$