

# CAPT Test Taking Strategies for Mathematics

The CAPT Math test assesses how well students compute and estimate, solve problems, and communicate their understanding. The test consists of contextually based problems, 24 grid-in and 8 open-ended problems that can be categorized into one of four strands. The open-ended questions are graded on a 3- pt rubric and the grid- in questions are worth one point and scored as correct or incorrect. The Mathematics test is divided into two days of testing. Each test period is 75 minutes in length and consists of 4 open ended questions and 12 grid-ins. Each year all open-ended questions and approximately half of the grid- in questions from the previous year's test are released to the public. Released items, scored student responses and additional information can be found at: [http://www.sde.ct.gov/sde/lib/sde/word\\_docs/curriculum/math/captg3\\_math\\_handbook\\_0108.doc](http://www.sde.ct.gov/sde/lib/sde/word_docs/curriculum/math/captg3_math_handbook_0108.doc)

Third Generation CAPT Mathematics Assessment Blueprint Number of Items and Points Across Standards			
CAPT Mathematics	Open-Ended Items	Grid-In Items	Total Point
Algebraic Reasoning	2	6	12
Numerical & Proportional	2	6	12
Measurement and Geometry	2	6	12
Working with Data	2	6	12
	<b>8 OE</b>	<b>24</b>	<b>48</b>

**By the spring of 10<sup>th</sup> grade students have already done much of the preparation needed to be successful on the CAPT.**

- Students have completed one full mathematics course and are through approximately three-quarters of a second mathematics course.
- During spring of their ninth grade year, students completed a “Freshmen Math CAPT Practice”.
- Prior to March of their tenth grade year, students completed a full length “Practice Math CAPT”.
- Throughout their ninth and tenth grade years, students completed curriculum relevant CAPT tasks.

**To help our students succeed PARENTS should:**

- Ensure their student brings at least one pencil to the test.
- Ensure their student brings a calculator which they are comfortable using. NO CELL PHONES OR PDAs ALLOWED.
- Insist their student get plenty of sleep every night, especially the nights prior to CAPT testing.
- Encourage their student to read each problem carefully.
- Encourage their student to pace themselves. Students should not spend too much time on questions they do not understand. Students should move on to the next question and then go back to difficult questions if there is time. Also, remind students that open-ended questions require more steps and time than grid-ins.
- Encourage their student to attempt every problem. Even if students can not complete the problem, they should complete any part of the problem they can.
- Remind their student to review their answers and make sure they have answered each question.

**When completing GRID-IN problems STUDENTS should:**

- Take no more than approximately two minutes to complete each grid-in problem.
- Be aware that NO problems have fractional or negative answers.
- Understand that some questions have several “correct” responses.
- Review the “rounding” requirements ( nearest whole number, nearest tenth...) of grid-in problems.
- Use the decimal point as a marker. Decimal answers go to the right, whole number answers to the left.

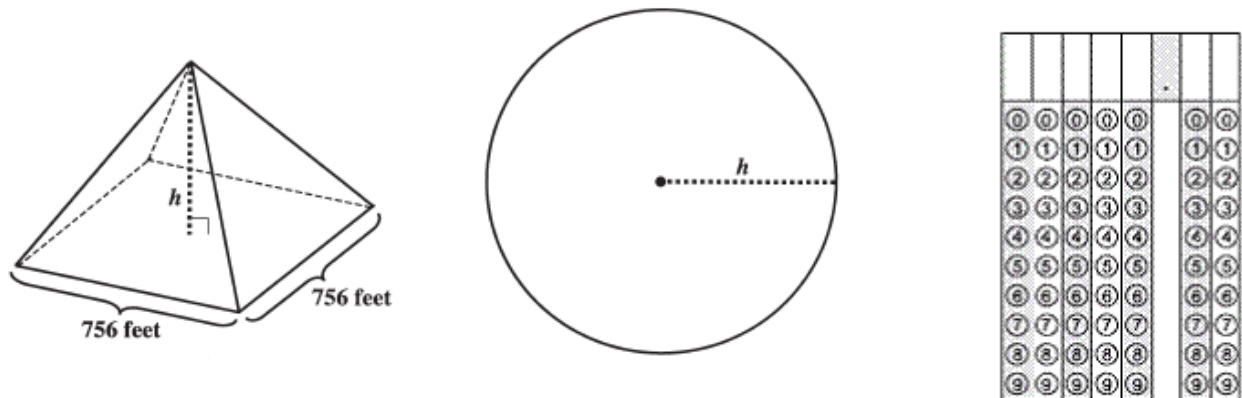
When completing OPEN-ENDED questions STUDENTS should:

- Answer the question within the first sentence of their response.
- Be aware that three sentences should suffice in an answer.
- Write their problem solving steps or explanation carefully and clearly identify their final answer. Understand that sentences do not need to be detailed if computations, tables, graphs... are referenced within the answer.
- Show work for every open-ended question. Even if they don't know exactly how to get the final answer, they should show work or explain parts of the solution that they can complete.

## SAMPLE GRID-IN QUESTION-2005 Released Item

### Great Pyramid

The Great Pyramid at Giza is the only one of the famous “Seven Wonders of the Ancient World” that still exists today.



15. The base of the Great Pyramid is a square with each side 756 feet in length. Suppose a circle, as shown above, has a circumference equal to the perimeter of the base of the Great Pyramid. The height,  $h$ , of the Great Pyramid has the same measurement as the radius of this circle. What is the height, in feet, of the Great Pyramid? Use 3.14 for  $\pi$  and round your answer to the nearest whole foot.

## SAMPLE OPEN-ENDED QUESTION-2002 Released Item

### Industrial Electricity Use

A utility company offers electricity to industrial users at a rate of 8 cents per kilowatt-hour. The company also offers a fixed annual rate of \$1,200,000 for unlimited use of electricity.

- Graph each of these two rates as a line on the grid in your answer booklet.
- Explain why a large industrial user of electricity would choose to pay the fixed annual rate. Use the information in your graph to support your answer.

### Third Generation CAPT Open-Ended Question 3 Point Scoring Rubric

**Score 3:** The student has demonstrated a **full and complete** understanding of all concepts and processes essential to this application. The student has addressed the task in a mathematically sound manner. The response contains evidence of the student's competence in problem-solving and reasoning, computing and estimating, and communicating to the full extent that these processes apply to the specified task. The response may, however, contain minor arithmetic errors that do not detract from a demonstration of full understanding. Student work is shown or an explanation is included.

**Score 2:** The student has demonstrated a **reasonable** understanding of the essential mathematical concepts and processes in this application. The student's response contains most of the attributes of an appropriate response including a mathematically sound approach and evidence of competence with applicable mathematical processes, but contains flaws that do not diminish the evidence that the student comprehends the essential mathematical ideas addressed in the task. Such flaws include errors attributed to faulty reading, writing, or drawing skills; errors attributed to insufficient, non-mathematical knowledge; and errors attributed to careless execution of mathematical processes or algorithms.

**Score 1:** The student has demonstrated a **partial** understanding of some of the concepts and processes in this application. The student's response contains some of the attributes of an appropriate response, but lacks convincing evidence that the student fully comprehends the essential mathematical ideas addressed by this task. Such deficits include evidence of insufficient mathematical knowledge; errors in fundamental mathematical procedures; and other omissions or irregularities that bring into question the extent of the student's ability to solve problems of this general type.

**Score 0:** The student has demonstrated merely an acquaintance with the topic. The student's response is associated with the task in the item but contains few attributes of an appropriate response. There are significant omissions or irregularities that indicate a lack of comprehension in regard to the mathematical ideas and procedures necessary to adequately address the specified task. No evidence is present to suggest that the student has the ability to solve problems of this general type.