



Calculator Applications

2026-2027
Qual • Dist • State

GRADES: 6-8 | ENTRIES: 3 PER SECTION | TIME: 30 MIN

RESOURCES: GRADING THE CALCULATOR TEST

SECTIONS. Grades 6-8 compete together.

ENTRIES. As many as THREE students from combined grade levels (grades 6, 7, and 8) may be entered in the Calculator Applications District contest from each school. Grade levels MAY be judged separately and additional entries may be allowed up to 3 per grade level at District, but only the top 2 places in combined grades 6, 7 & 8 will advance to State.

PREPARATION FOR CONTEST. Read and follow all instructions provided in the “Information Pertaining to All Contests” section of the *PSIA Academic Handbook*. Preparation for the Calculator Applications contest should include practice using a calculator that is familiar to contestants. Calculator Apps tests from previous years of competition (available at PSIA Store online) provide multiple practice problems for students. No specific calculator is recommended; however, the list below should give coaches a starting point. Only ONE calculator will be allowed during testing.

ADVANCING TO STATE. First and second place winners from the contest will advance to State. Third place winners will be alternates. See 8 for more details. See 109 for an abbreviated chart for contest administration.)

NATURE OF THE CONTEST. The contest presents 80 problems in straight-forward numerical calculation problems, geometry problems, and word problems. Both accuracy and speed are factors in the competition. **ONLY one** silent, hand-held, tapeless calculator may be used and should be brought to contest. Geometric problems involve knowledge of formulas for simple figures such as circles, squares, rectangles, and right triangles and solids. Word problems require application of appropriate mathematical skills and practical knowledge to real-life situations. Contestants are NOT allowed to use timers during the contest.

WHAT HAPPENS IN THE CONTEST. The contest director will announce the time and place that contestants and one adult should report for verification of the scoring of tests. Contestants will be assisted by the director and assistant(s) in clearing all calculator memories and turning calculators to the “off” position. The contest director will tell contestants their ID numbers, usually during roll call. Tests will be distributed to contestants face up, and contestants will be instructed to write their grade levels and their contestant ID numbers in the spaces provided on the front cover. Contestant must not open the test until the start signal is given. (Substitutes taking

the place of absent registered contestants should let the contest director know as they enter the room to save time in roll call.) No alarm watches or other devices that emit sound are allowed in the contest room.

SAMPLE PROBLEMS. Representative problems of medium difficulty (page 3 punch and word problems) are provided below. Sample geometry problems are shown above.

TIME ALLOTTED. Contestants will have 30 minutes beginning at the start signal. A 5-minute warning will be given by the contest director when five minutes remain in the contest. Contestants will remain quietly in their seats until the time has expired.

MARKING ANSWERS. Contestants may write on the test paper, but only the answer should be written in the answer space. Any marking or erasure in the answer space will constitute an attempt. Except for integer and dollar sign word problems, answers may be written in decimal form (12.3, 0.0190) or scientific notation (1.23×10^1 , 1.90×10^{-2}). These type answers should be written with three significant digits only, with plus or minus one digit error in the third significant digit permitted. Integer problems require answers written as an integer, and no error is permitted. Dollar sign problems should be answered to the exact cent (regardless of the number of significant digits), but plus or minus one cent error is permitted. Answers should be given in the units specified on the answer blank, if a unit is required, and with the correct sign. All test questions up through the last one attempted, including an erased attempt, will be scored.

SCORING. Grade only through the last problem attempted by the contestant. A contestant attempts a problem when any mark (erased or not) is present in the answer space. Award 5 points for each correct answer and deduct 2 points for each incorrect answer. Contestants may erase answers or mark through and replace answers. Any erased, marked-through, or skipped item through the last question attempted that does not result in a correct answer is considered incorrect and receives the 2-point deduction. Erasures that can still be read and are correct count as correct.

VERIFICATION PERIOD. See page 16.

MATERIALS. Previous PSIA Calculator Applications tests are available at the PSIA Store online. Dr Numsen’s book *Mastering Calculator Applications* is written specifically for this level of the contest. You can order

Mastering Calculator Applications at <https://www.academicmeet.com>.

Shall and Must List

Contestants **shall** use three significant digits and/or proper scientific notation.

Result: Individual problems without the correct number of significant digits or proper scientific notation are counted incorrect. Excess errors of these types may result in disqualification at the meet director's discretion to avoid large negative scores.

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Contestants **shall** write their Contestant ID on the test booklet and not their name or their school name.

Result: Contest director should remedy the answer sheet by erasing or covering up the identifying information.

SUGGESTED CALCULATOR LIST



Texas Instruments:
 * TI-84 (Plus Series)
 * TI-Nspire
 TI 36x Pro
 TI 83 Plus
 Hewlett Packard 35S

* Most Used at State Contest

SAMPLE PROBLEMS

38. SQUARE

Perimeter = 10300

38. _____

9: $731 \times 70.9 / 2.69$ ----- 9=_____

10: $4.51 \times 0.171 \times 7.49 \times 6.12$ ----- 10=_____

11: Calculate the square root of the sum of 8.75 and one-half of pi. ----- 11=_____

12: A golf ball traveled 245 yards. How many inches did it travel? ----- 12=_____ in

13: Buckets of corn weigh 16.3 lbs, 18.3 lbs, and 22.8 lbs. What is the total weight of the corn in the buckets? ----- 13=_____ lbs