

• **ENTRIES.** As many as **THREE students in COMBINED grade levels 4/5 and 3 in COMBINED grade levels 6, 7, & 8** OR ages 9,10, 11, 12 and 13 respectively by Sept. 1 of the current school year, if in an ungraded school, may be entered in the NUMBER SENSE District Contest from each school. Designated adults representing each school will select contestants to represent the campus at the District Meet based on their abilities and interest in mental math, as well as other factors, which are decided upon by each school. Each grade level is judged separately in contest.



• **ADVANCING TO STATE.** A minimum of four students in a grade or age level from at least two different schools must compete at the district meet in order for the top **two** to advance to State. (See page 8 for complete rules for advancing to State.)

• **NATURE OF THE CONTEST.** The contest presents 80 problems. Elementary (Grades 4 and 5) problems requiring the applications of the four basic operations (+, -, x, ÷) for their solution constitute the core of what is commonly thought of as number sense. The middle school contest may range from whole number arithmetic to topics on the study of sequences in analysis, and topics relating to the efficient and/or high speed solution of mathematics problems.

• **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. 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. Contestants must not open the test until the start signal is given. The contest director will tell contestants their ID numbers, usually during roll call. (Alternates taking the place of absent registered contestants should be sure to 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.

**TIME ALOTTED.** Contestants will have 10 minutes beginning at the start signal. No time warning will be given. Contestants shall remain quietly in their seats until the time has expired.

**MARKING ANSWERS.** Contestants **MUST** bring to contest and use their own standard **BLUE** ball point or ink pen(s) to write answers in the blanks provided on the test. Test is disqualified if the required standard blue ink is not used. **Pens will NOT be provided by the contest director.** Erasures, extraneous marks, and markouts are not permitted on the test paper. Any marking in the answer space will constitute an attempt. Num-

ber Sense problems are arranged in a sequential format (see p. 43).

(a) *Fractions.* All fractions must be reduced to lowest terms. Improper fractions are acceptable answers. Decimal answers are permitted for the unstarred problems whose answers are exactly expressible as decimals. For example,  $3/2$ ,  $11/2$ , and 1.5 are all acceptable. Starred problems on the test sheets require approximate integral answers, i.e., they permit 5% error; unstarred problems require exact answers.

(b) *Symbols.* Symbols such as § and % are usually printed on the sheet. Therefore, answers require only the writing of numerals. If a symbol is omitted from the printed sheet, it is not the responsibility of the contestant to make sure the answer is complete. If not printed, the student need not include it in the answer. (This rule excludes dollars and cents markings.)

(c) *Dollars and Cents.* In agreement with the philosophy that answers should be complete, all dollars and cents problems must have complete answers. That is, twenty-three dollars must be written as \$23.00 (with \$ and .00). Sixteen cents must be written as \$.16 or 16¢, depending on the answer blank format. The contestant's adding of a symbol, such as the \$, to a line that already has the symbol posted does not constitute an error. **Commas are allowed but not recommended.**

(d) *Efficient Forms.* Numerical answers should be written so that the answers are complete as in the two examples above. However, the answer should be written in the most efficient form possible. For example, if the answer is 16, the written answer 16.000 is not acceptable for the purposes of the number sense competition. Extraneous zeroes are not to be used. For example, if .16 is the answer, 0.16 is not an acceptable format.

(e) *Exponentials.* An answer such as  $3 \times 10^3$  should be expressed as 3000 and not left in exponential form.

INSTRUCTIONS FOR THE CONTESTANT *CONTINUED*• **SAMPLE TEST PROBLEMS.**

1.  $34 \times 11 =$  \_\_\_\_\_
2. The GCD of 24 and 30 is \_\_\_\_\_.
3.  $79 \div 4$  has a remainder of \_\_\_\_\_.

• **SCORING.** Add 5 points for each correct answer. Subtract 2 points for each incorrect answer, for each answer that was marked through, marked over, or erased, AND for skipped or unanswered test items down through the last item attempted.

• **VERIFICATION PERIOD.** No pens, pencils, papers, cell phones, or any other items should be in contestants' area while tests and answer sheets with keys are reviewed. Contestants and ONE coach OR parent OR adult have 15 minutes to check the computation of scores and ask questions about items counted incorrect. If the contest is held before **March 27 at District or May 1 at State**, tests must be turned back in to the contest director. Contestants will be disqualified from the contest should the paper be taken from the room prior to this date. After verification has been completed,



awards will be issued in reverse order, beginning with 6<sup>th</sup> place. (At State, medals will be awarded through 6<sup>th</sup> place.)

• **MATERIALS.**

A variety of materials from a large number of sources is available for those who wish to get involved in PSIA number sense competition. Several are listed below: 1) Previous years' PSIA Number Sense tests are included in both the PSIA Elementary and Middle School Academic Study Materials booklets, which may be ordered from the PSIA office (Order forms is in the appendix of this handbook).

2) *The Elements of Number Sense 2009 Edition.* by Doug Ray. A student-friendly resource for learning the basics of Number Sense. Includes a few tricks and tests for honing skills. Available on PSIA order form for only \$5.00. Other resource are available at the Dr Numsen website:

[www.academicmeet.com](http://www.academicmeet.com).

3) *Number Sense: A Starters Kit* (booklet and sample tests), *RAM Elementary Number Sense* (10 tests), and *Junior High RAM Classics* (tests). Leo Ramirez, 3103 West Hwy. 83 #24, McAllen, Texas, 78501. Phone: 512/682-5185.

4) AMT Test Writing Service, 675 Miller Rd., Azle, Texas, 76020. 817/444-3655.

## ADDITIONAL INFORMATION FOR COACHES / CONTEST DIRECTORS

• **PREPARATION FOR CONTEST.** Read and follow all instructions provided in the "Information Pertaining to All Contests" section of the *PSIA Academic Handbook*. Observe and practice with students all rules and procedures delineated in the "Instructions to the Contestant" and in the "Checklist for Contest Directors" and the "Checklist for Graders." Preparation for the Number Sense Contest should include multiple mind math practice sessions. Invitational meets with other schools are exciting for students and help them hone their skills in number crunching.

In addition to training students in the format of the tests, the resources named above provide practice that may best prepare students for competition.

• **PERSONNEL NEEDED FOR CONTEST.**

Contest Director and Assistant Director from two different schools, each knowledgeable of contest construction and administration.

*Graders.* Director and assistant director may also serve as graders. To expedite the grading process, provide at least two math certified graders for every **10 papers.**

• **SCORING (ADDITIONAL INFORMATION).** +5 for each correct answer, and -2 for each incorrect answer, erased answer, marked over, or marked through answer. REMEMBER, contestants are NOT allowed to skip items without penalty. **Skipped items on this test will be counted incorrect.** The test will be scored through the last item attempted. Graders should each use a different color pen or pencil to mark papers and place their initials at the bottom of the test answer sheet to indicate that they have graded the paper.

