

Washington State Mathematics Council

2009 High School Mathematics Contest Rules

1. The Regional Contests and State Finals will consist of four events:

A. Team Problem Event shall be a single topic problem with a series of parts to be solved in one hour. The problem shall emphasize mathematical problem-solving, reasoning, communication, connections and team effort. The assessment rubric will accompany the problem. A team shall consist of no more than three (3) members. There will be a Varsity and a JV competition where Varsity Teams will be competing for state berths and the JV Teams will not be qualifying for state but can be recognized for reaching a benchmark. JV Teams will do the same problem but will be provided significant aids for solving the problem. All Varsity Team members must be from the same school or feeder school and no two team members may be from the same grade level (9th, 10th, 11th, or 12th grade). There are no grade level restrictions for a JV Team. Only one set of solutions shall be accepted from each team. Approved calculators as well as non-electronic items such as pencils, pens, markers, rulers, tape, compasses, protractors, etc. will be allowed but not furnished. All other approved materials shall be supplied including the paper for the answers.

B. Team Project Event shall consist of a particular social/environmental/economical/etc. problem. A team of two to six (2-6) students from the same school shall produce a solution to the problem. The team shall have from the time of the announcement of the problem in the preceding fall until due date(s) specified in Project Problem or Rubric. Their coach and others may guide them but the solution must be their own. **Three** copies of the **report** shall be submitted to the appropriate Regional Director. (**Three** updated copies shall be submitted to the Contest Coordinator by the date specified in the Project Problem if the project qualifies for state). A **display** shall be required at the regional contest site (and again at the state competition if the team qualifies) and must be limited to **approximately** 15 square feet. The team must furnish all materials for the display. Each team shall have no more than **five (5) minutes** for a formal **presentation** of their solution at the regional contest (and again at the state competition where they will be judged again if the team qualifies). At least two members must be present during the presentation. Equipment not approved for other events will be allowed in the team's presentation but reasonableness is requested. The team must also provide all equipment for the presentation. Unless otherwise noted by the judges, at least one team member must be available at the display to answer judges' questions about their team's project. Presentation of the projects is intended to occur between events however, the number of participants may require presentations during other events. Contact your regional director near the contest time for the actual time of your presentation. Scheduling may be prioritized according to scores on the report. Please understand that this may cause an unavoidable conflict for team members of the project wishing to participate in other events.

C. Topical Problems Event will consist of thirty (30) multiple choice questions dealing with the topics: **number sense, geometric sense, probability & statistics, algebraic sense, and measurement**. The event will be given in two parts. Each part shall be thirty (30) minutes in length and contain a mix of questions. There will be a five (5) minute break between parts. The Topical Problems Event may be taken as an individual or as a team of two (2) or three (3) members from the same school or its 9th grade feeder school. No two team members may be from any one grade level (9th, 10th, 11th, or 12th grade.) Only an

approved calculator will be allowed as an external aid during the Topical Problems Event.

D. Mathematical Knowdown Event shall be for individuals only. A single elimination format will be utilized. The questions shall require quick response answers. The **First Round** shall be mental (no aids will be allowed) and each contestant shall have ten (10) seconds to complete his/her verbal response. Each person shall have the opportunity to answer one question. The **Second Round** shall allow fifteen (15) seconds for a written response. There will be five (5) questions, one from each content strand. Only pencil and paper will be allowed as external aids in the Second Round. Each contestant will answer all five questions and the ones with the most right answers will go on. The **Third Round** shall allow twenty (20) seconds for each contestant's written response. Only pencil, paper and an approved calculator will be allowed as external aids. The Third Round shall continue until the top three contestants can be determined. Contestants are eliminated because of an incorrect answer, late response or no answer and shall be excused at the end of the round. Timing in each round shall start as soon as the question is read completely.

2. Divisions

Any high school in the State of Washington may enter teams and individuals in the WSMC Regional Contest. Qualifying teams and individuals shall be invited to the State Finals. The classification as to whether a school is Division I or Division II shall be determined using current Washington Interscholastic Activities Association (WIAA) handbook definitions. Division I shall be AA and larger schools. Division II shall be A and smaller schools. A Division II team may choose to compete with the Division I teams but Division I teams may not choose to compete against Division II teams. A team may not compete in both divisions.

3. Limits on the number of entries per school shall be as follows:

Each participating school may bring a maximum of 20 students at each grade level. Each participating school shall be limited to: 3 Knowdown Participants, 5 Project Teams, 10 Varsity Team Problem Teams, and 20 Topical Teams. JV Team Problem Teams and Topical Individuals are not limited. The site coordinator may establish more restrictive limits for the events if facilities/personnel are unable to accommodate the numbers of participants/schools. If a region's site does fill the extra teams/schools may choose to participate at another site.

4. Scoring

A. Team Problem Event: The Team Problem Event shall be scored using the multi-part assessment rubric presented with the problem. There shall be no ties. If scores are the same point value, judges will break the tie and rank all results by adding 0.1 points to the better papers.

B. Team Project Event: The Team Project Event shall be scored using a multi-part assessment rubric presented with the problem. If scores are the same point value, judges will break the tie and rank all results by adding 0.1 points to the better papers.

C. Topical Problems Event: The Topical Problem Event shall be thirty (30) problems each worth five (5) points for a right answer. No (0) points shall be awarded for an incorrect answer and one (1) point shall be awarded for each unanswered problem.

D. Mathematical Knowdown Event: The Mathematical Knowdown Event shall have all of the participants line up in an order determined randomly. There shall be a **Quiz Master/Timer**. For the **First Round**, the **Quiz Master** shall read the first of a list of questions to the first contestant. The **Quiz Master** shall indicate when the appropriate time has

passed and shall accept an answer as a correct answer only if it is correct and is essentially completed in the time allotted. The **Quiz Master** then will read the next question to the next contestant who shall be timed and judged as the first was and so on. The participants that have correctly answered their first round question proceed to the second round. Each of the five **Second Round** questions shall be read one at a time and the participants' answers scored after each question. The five having the highest number of correct answers and any tied with these five shall continue to the third round where placing will be determined. **Third Round** questions shall be projected on a wall or screen. Each contestant shall write their third round answers down on paper (as the shall for the second round). At the end of time, no further writing shall take place and the papers will be checked. Those contestants with the correct answers shall remain for continued competition until the first four places are determined. A **Judge** shall be present at all times and any protest shall be settled by the **Judge** whose decisions are final.

5. Qualifying and Substituting for State Finals

A. Varsity Team Problem Event The number of teams that qualify for state from each region shall be determined by the formula: $(\text{Number of teams in the division})/10$ and rounded up to the next whole number. Additional teams will qualify if their score meets or exceeds the state qualifying standard score stated at the competition.

B. Team Project Event The number of teams that qualify for state shall be determined by the formula: $(\text{Number of teams projects in a region})/10$ and rounded up to the next whole number. Additional teams will qualify if their score meets or exceeds the state qualifying standard score stated at the competition.

C. Topical Problems Event: The number of teams that qualify for state shall be determined by the formula: $(\text{Number of teams in the division})/10$ and rounded up to the next whole number. Additional teams will qualify if their score meets or exceeds the state qualifying standard score stated at the competition.

The number of individuals that qualify for state shall be determined by the formula: $(\text{Number of individuals in the region})/10$ and rounded up to the next whole number. Additional individuals will qualify if their score meets or exceeds the state qualifying standard score stated at the competition or they are recognized as a **Distinguished** competitor at their grade level.

D. Mathematical Knowdown Event The top three (3) individuals from each region shall qualify for state. The top individual shall be the only individual in the last round to give a correct answer. The second and third individuals to qualify for state shall be determined by starting with those contestants eliminated in the last round and proceeding in the same manner as before.

E. Substitutes for Team Events For the Varsity Team Problem team, the Topical Problem team and the Team Project team, if a qualifying member is unable to attend the state competition or a team is short-handed, additional members may be made added provided that:

1. the substitute(s) does not violate the make up of a team as defined in section one (Team Problem and Topical Problem teams cannot have two students from the same grade level)
2. the team has at least one of the original members.

Teams may be augmented up to the maximum number allowed as per section one.

6. Ad Hoc Team Problem Event (State only)

At state, participants that qualified for state in the Team Project Event, Topical Events, or the Mathematical Knowdown Event but not the Team Problem Event may form mixed teams and compete for separate awards in the Team Problem Event. Mixed teams must have three members representing three different school and three different

grade levels. The State Coordinator may limit the number of teams on contest day if interest exceeds capacity

7. Ad Hoc Topical Team Event (State only)

At state, participants that qualified for state in the Team Project Event, Team Problem Event, or the Mathematical Knowdown Event but not the Topical Events may form mixed teams and compete for separate awards in the Topical Team Event. Mixed teams must have three members representing three different school and three different grade levels. The State Coordinator may limit the number of teams on contest day if interest exceeds capacity.

8. Additional Rules

- A. Participants are asked to bring two #2 pencils and a calculator. (Only calculators sanctioned for use in SAT/AP exams are acceptable and approved for this contest. All calculators are acceptable for use in the Team Project Event.) Problems sheets, answer sheets and scratch paper shall be provided. Other materials shall not be allowed except foreign language dictionaries and items described in section 1 of these rules.
- B. In an individual test no participant may talk once the event has begun. During team events and competitions, discussion among team members is encouraged but discussions between teams are not allowed.
- C. Participants who violate a rule in any event shall be disqualified from that event and may, at the discretion of the contest director, be disqualified from the contest.
- D. Any rules or conditions not covered herein shall be established by the WSMC Executive Board, whose decisions are final.