



# 2016 Fall Rural Robotics Challenge

## November 5, 2016

---

### Math Problems (3<sup>rd</sup> – 5<sup>th</sup>)

Remember that there is more than one way to work each problem out.

Each team of two completes one set of problems for their competition category. For each of the four problems below complete them on one sheet of paper each, show ALL your work including all calculations and organize your work as follows:

- a) Print the names of the team members at the top.
- b) Draw a sketch of the problem and include all the facts you are given.
- c) Show all formulas and all your work, including calculations. Step by step is best for the most points.
- d) Describe in words what you had to do to solve the problem.
- e) Draw a square around the final answers. Be sure to include any units.

**Problem #1:** Allen read about the Solar System. He read 12 pages a day of a book which has 144 pages. How many days did it take Allen to finish reading the book?

**Problem #2:** In the 2012 Summer Olympics in London, England, the United States won 16 more medals than China. The two countries won a total of 192 medals. How many medals did each country win?

**Problem #3:** What day and time is it exactly 7 hours and 45 minutes after 3:00pm on Friday?

**Problem #4:** There are 5,280 feet in a mile. How many feet are in  $\frac{7}{11}$  of a mile?

**Problem #5:** This problem you will be given during judging. The team will have 2 minutes to decide how to approach the problem and then explain it to the judges. You are not expected to give the answer. We are interested in your approach to the problem more than the answer. Think clearly, logically, and be organized.

Team members should work together to come up with the best solutions. Teams cannot work together.

READ THE RULES CAREFULLY. YOU WILL BE JUDGED ON FOLLOWING THE RULES AND IN SHOWING ALL YOUR WORK, INCLUDING ALL CALCULATIONS. REMEMBER ONE SHEET OF PAPER FOR EACH PROBLEM. BE READY TO EXPLAIN TO THE JUDGES ONE OF THE PROBLEMS #1 - #4 THAT THE JUDGES WILL SELECT.

**THE MATH PROBLEM SHEETS MUST BE TURNED IN AT TEAM CHECK-IN. ONE SHEET FOR EACH PROBLEM. YOU SHOULD TURN IN FOUR SHEETS PER TEAMMATE. PLEASE HAVE THEM STAPLED TOGETHER.**