2023 MATH Field Day   NAME_____

WORD PROBLEMS (11TH GRADE)   SCHOOL_____

All answers must be exact (i.e. they may contain π, radicals fractions, terminating or repeating decimals, but may NOT contain decimal approximations).   Fractions must be expressed in lowest terms and radicals must be expressed in simplest radical form.

1. _____   The sum of two numbers is 12. If twice the smaller number is subtracted from the larger number, the difference is 21. Determine the numbers.

2. _____   A car rental agency rents a car at a rate of $50.00, plus $.10 per mile. How many miles were driven if a trip cost $120.00?

3. _____   A farmer has a water tank that is 1/6 full. If 10 gallons are added, then the tank will be 1/2 full. How many gallons will the tank hold?

4. _____   A jet plane traveling at 490 mph overtakes a Cessna traveling at 210 mph that had a 2 hour head start. How far from the starting point are the two planes?

5. _____   A student scored 83%, 95%, 88%, 86% on the first four exams. In order to earn an A in the course, the final average must be 92%. If the final counts as two grades, what score must be made on the final exam?

6. _____   What is the cost to spend the night at SEMO Inn if the cost it $92 and the tax rate is 8%?

7. _____   The product of two consecutive positive integers is 11 greater than their sum. What are the integers?

8. _____   Find a positive real number such that the sum of that number and its reciprocal is $\dfrac{17}{4}$.

9. _____   An open box with a square base is to be constructed from 300 square inches of material. What would be the dimensions of the box if the height of the box was 3 inches?