9TH GRADE WORD PROBLEMS   SCHOOL:_____
Write your final answers in the blanks to the right of each question. **Be sure to include units where applicable**.

1. Three consecutive numbers sum to 132. Write the smallest of the three numbers.   1. _____

2. The interior angles of a quadrilateral sum to $360°$. If three of the four angles have an   2. _____
    average measure of $82°$, what is the measure of the fourth angle?

3. A car has a twelve-gallon gas tank and can travel an average of 31 miles per gallon. The   3. _____
    owner of the car wants to take a road trip from New Orleans to Minneapolis, a 1,224 mile
    trip. If they start with a full tank of gas, what is the minimum number of refills at gas
    stations will it take to complete the trip?

4. A chemistry lab needs to create a 5L solution which is 60% alcohol. If they currently have   4. _____ , _____
    a 90% alcohol and a 40% alcohol, how much of each solution do they need? Give the needed
    amount of the 90% solution first, then the needed amount of the 40% solution second.

5. A positive number minus its reciprocal is 55/24. Write the larger of these positive fractions. 5. _____

6. You and a friend leave your homes at the same time and begin walking towards each other. 6. _____
    If you're traveling at 2.3 miles per hour, your friend is traveling at 1.5 miles per hour, and
    your homes are 4 miles apart, then how long will it take you to meet? Answer in minutes,
    rounded to the nearest minute.

7. The population of a city increased from 150,014 to 174,948 over the course of seven years. 7. _____
    What is the average increase in the population per year over these seven years?

8. Three pipes are available to fill a pool. The first pipe will fill the pool in 4 hours, the second   8. _____ , _____
    pipe will fill the pool in 5 hours, and the third pipe will fill the pool in 3 hours and 30 minutes.
    If all three of the pipes fill the pool, how long will it take for the pool to fill? Write your
    answer in hours and minutes, rounded to the nearest minute. (i.e. 3 hr, 4 min).

9. An isosceles triangle has two sides that are the same length, while the third side is a   9. _____, _____, _____
    different length. If the perimeter of the triangle is 60 centimeters, and the third side is
    twice the length of the other two, then what are the lengths of the sides?

10. On a map of a university campus, 2 centimeters is equivalent to a distance of 80 feet. If   10. _____
    a building on the map is 7 centimeters long, what is the true length of the building?

11. A mobile game gives you a choice of two exclusive objectives. Objective A rewards   11. _____, _____
    600 gems and will take 11 minutes to complete. Objective B rewards 850 gems, and will
    take 16 minutes to complete. Which objective is the best use of your time, and how many
    gems will you receive per minute of your time spent (rounded to the nearest whole gem)?

12. A track ring is 200 feet in circumference. Khaled and Alice begin jogging around the ring   12. _____
    at the same time. Khaled's average speed is 6.5 feet per second, while Alice's average speed
    is 8 feet per second. How many seconds will it take for Alice to lap Khaled, meaning that
    she and he are side-by-side, but she has taken one additional lap around the ring? Round
    your answer to the nearest second.