｡° ✧ Algebra Round ✧ °｡

30 minutes

Please put all answers on the provided answer sheet, units are not required

1. Reed selects a three-digit number and subtracts it from 1000. After, the result is doubled. Once it has been doubled, he adds 7 to the result. What is the largest number Reed can get?

2. Arthur Dent is planning to alter a route of a hyperspace bypass so it won't collide with Earth. His planned route's path is modeled by the function: $f(x) = x^5 + 2x^3 + 3x - 9$. How many real zeros are there in his polynomial?

3. The average weight of 6 large robots is 150 lbs and the average weight of 4 small robots is 120 lbs. What is the average weight of the 10 robots?

4. At 0 degrees Fahrenheit, the speed of sound through air is about 1056 feet/second, and a mile is 5280 feet. If, on a below freezing winter night, you saw a lightning flash, and then heard it 2 seconds later, how many miles away was the lightning strike?

5. Luke Skywalker stole 2 blocks of cheese. The first block contains 4% fat, an amount that is 80% less than the amount in the second block. What is the percentage of fat in the second block of cheese?

6. Wall-E's positive integer is x greater than triple the amount of EVE's positive integer, and these integers add up to 35. How many different integers could x be?

7. The ewoks are selling berries at the market. A berry carton originally priced at $80 was put on sale for 25% off. If a 10% tax was added to the sale price, what was the total selling price of the carton?

8. Baby Yoda is playing with dominos. Using 2x1 dominos, how many ways are there to completely fill a 2x5 rectangle?

9. How many numbers are 72 divisible by (including 1 and 72)?

10. What is the remainder when 7^{100} is divided by 3?