2016 MATH FIELD DAY NAME_____

Number Bases SCHOOL_____

Place all answers in the blank space provided. Calculators are allowed.

_____ 1. Write 6343_7 in base 10.

_____ 2. Write the decimal number 7508 in base 7.

_____ 3. Convert $8B4F_{sixteen}$ to binary form.

_____ 4. Convert 10011110_{two} to octal form.

_____ 5. Write the largest 7 digit base 5 number and write it in decimal form.

_____ 6. Which is largest 4312_{five}, 527_{twelve}, 2214_{seven}?

_____ 7. Add $1022_3 + 2121_3$ and leave the answer in base 3 form.

_____ 8. Perform the division $143_5 \div 2_5$ and leave the answer in base 5 form.

_____ 9. Multiply $43_7 \times 25_7$ and leave the answer in base 7 form.

_____ 10. Change 1011.01_{five} to decimal form.

_____ 11. The multiplication $24_b \times 24_b = 1104_b$ is correctly done in base b. What is the positive value of b?

_____ 12. Solve the equation $1000000_2 = 100_b$ for b.

_____ 13. What is the smallest positive value of t such that $23t42_6$ is divisible by 5?