Name: _____

CS251 Conversions Worksheet

Work each problem by hand (no calculators or conversion problems). Show your work.

1. $10101_2 = $ _____ $_{10}$

2. $11101_2 = $ _____ $_{10}$

3. $110101_2 = $ _____ $_{10}$

4. $120_3 = $ _____ $_{10}$

5. $2102_3 = $ _____ $_{10}$

6. $43_5 = $ _____ $_{10}$

7. $2343_5 = $ _____ $_{10}$

8. $227_{12} = $ _____ $_{10}$

9. $a_{12} = $ _____ $_{10}$

10. $b_{12} = $ _____ $_{10}$

11. $ab_{12} = $ _____ $_{10}$

12. $a1b_{12} = $ _____ $_{10}$

13. $45_{10} = $ _____$_2$

14. $33_{10} = $ _____$_2$

15. $32_{10} = $ _____$_2$

16. $31_{10} = $ _____$_2$

17. $617_{10} = $ _____$_5$

18. $747_{10} = $ _____$_6$

19. $171_{10} = $ _____$_{12}$

20. $279_{10} = $ _____$_{12}$

21. How many (binary) bits do I need to uniquely identify each of the 45 students in this class?

22. How many (binary) bits do I need to uniquely identify each of the 24876 students at GVSU?

23. How many (binary) bits do I need to represent the time of day (in hours and minutes)? (There is more than one way to interpret this question. Specify your interpretation.)

24. Suppose I had a set of dials each with 7 symbols. How many dials would I need to uniquely identify each of the 45 students in this class?

25. How many "7-symbol" dials would I need to represent each of the 24876 students at GVSU?