Name: _____

CIS351 Conversions Practice

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. $\texttt{a}_{12}$ = _____$_{10}$

10. $\texttt{b}_{12}$ = _____$_{10}$

11. $\texttt{ab}_{12}$ = _____$_{10}$

12. $\texttt{a1b}_{12}$ = _____$_{10}$

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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?