

Math 5a. Homework 5

Numeral systems

1. Take your Birthday date (day only) and add 30. Then do the same as your previous homework. Take that many objects of the same kind, such as matches, candies, or counting sticks.

Use your objects to write the chosen number in **every base from 2 through 16**, arranging them into groups for each base. Record all 15 representations in your notebook and label each one with its base.

For a base **b**, make groups of **b** objects. Then combine **b** of these groups into a larger group, and continue in the same way. Keep grouping until fewer than **b** groups remain at each level. Read the counts from the largest groups down to single objects to find the digits. Write **0** for any missing place.

Remember: Use capital Latin letters for digit values greater than 9:

A = 10 B = 11 C = 12 D = 13 E = 14 F = 15

In base **b**, only digits with values from **0** to **b - 1** are allowed. For example, base 12 uses 0-9, A, and B.