Discrete Math Quiz: Number Bases

1. Write the decimal number \((40)_{10}\) in its binary (base-2) and its ternary (base-3) representations.

2. Write the decimal numbers \((1)_{10}, (2)_{10}, \ldots, (10)_{10}\) in their base-4 representation.

3. Which number is larger \((212)_4\) or \((100110)_{2}\)?

4. In the base-14 system: \(A = 10, B = 11, C = 12\) and \(D = 13\). What is the decimal value of the number \((BAD)_{14}\)?

5. What happens to a base-3 number when a 1 is appended at its end?

6. Which base-2 numbers are multiples of 2?