

8. A Dudeney number is a positive integer that equals the cube of its sum of digits. For example, $512 = 8 * 8 * 8$ is a Dudeney number because $8 = 5 + 1 + 2$. Similarly, $4913 = 17 * 17 * 17$ is Dudeney as $17 = 4 + 9 + 1 + 3$.

Complete the following C program to check if a given number is a Dudeney number.

[5 * 1 = 5]

```
#include <stdio.h>

int main() {
    int n;          // Input number
    int m;          // Copy of input number n
    int i;          // Index variable to extract digits
    int s = 0;      // Variable to accumulate the sum of digits of n
    int d;          // Next digit in m from right to left scan

    scanf("%d", &n);    // Read n
    m = n;              // Copy n to m

    // Extract and accumulate sum of digits
    for (i = 0;          ; ++i) {
        // Termination of loop

        d =              // Find the next digit in m
        // from right to left scan

        s =              // Accumulate the sum of digits in s

        m =              // New m after removing
        // the right-most digit d

    }

    // Check for Dudeney number condition and print

    if (                )

        printf("%d is a Dudeney number\n", n);
    else
        printf("%d is not a Dudeney number\n", n);

    return 0;
}
```