

Name:

Problem 1: For $n \geq 1$ an integer, let

$$f(n) = \sum_{d|n} (d + 1).$$

What is $f(4)$?

Solution: We recall that the notation $\sum_{d|n}$ means “sum over the positive divisors of n .” The positive divisors of 4 are 1, 2 and 4. Therefore we have

$$f(4) = (1 + 1) + (2 + 1) + (4 + 1) = 2 + 3 + 5 = 10.$$