2. We want to show the sum of any five consecutive intergers is divisible by 5.

Let $n \in \mathbb{N}$ be any integer. Then $n, n+1, n+2, n+3, n+4$ are any five consecutive integers.

So
$$n + (n+1) + (n+2) + (n+3) + (n+4) = 5n + 10$$
$$= 5(n+2), \text{ which is a multiple of } 5.$$

Hence, we prove that the sum of any ~~too~~ five consecutive integers is divisible by 5.