Execise 2

Theorem: The sum of any five consecutive integer is divisible by 5 (withour remainder)

$$\forall n(\sum_{i=0}^{4} n + i = q)$$

$$q, n \in N$$

$$5/q, (q \; is \; divisible \; by \; 5)$$

Proof:

$$n + (n+1) + (n+2) + (n+3) + (n+4) = 5p, p \in N$$

$$5n + 10 = 5p$$

$$n + 2 = p$$

Hence, the theorem is true, since p is $n + 2$ for every n.