2. Say whether the following is true or false and support your answer by a proof: The sum of any five consecutive integers is divisible by 5 (without remainder).

PROOF Assume the above statement is true. If the sum, s, of any five consecutive integers is divisible by 5, then, there is an integer p such that s = 5p. Consider an integer n. The next four consecutive integers are: n + 1, n + 2, n + 3, and n +4. The sum of these five consecutive integers, s = n + (n + 1) + (n + 2) + (n + 3) + (n + 4), which is equal to 5n + 10. Simplifying, s = 5(n + 2). (n + 2) is an integer - call it p. So, s = 5p. Therefore, s is divisible by 5. Hence, the statement is true. This completes the proof. ■