6. (i) Use a counterexample to show that the following statement is false.

"$n^2 - n - 1$ is a prime number, for $3 \leq n \leq 10$."

(2)

(ii) Prove that the following statement is always true.

"The difference between the cube and the square of an odd number is even."

For example, $5^3 - 5^2 = 100$ is even.

(4)

(Total for Question 6 is 6 marks)