10. (*a*) Prove that for all $n \in \mathbb{N}$, $n^2 - 2n + 2$ is not divisible by 4

(4)

"Given $x \in \mathbb{R}$, the value of $|4x - 19|$ is greater than or equal to the value of $(x - 4)$."

(*b*) State, giving a reason, whether the above statement is always true, sometimes true or never true.

(2)

(Total for Question 10 is 6 marks)