

QUESTION

Find and classify the stationary point of the function $f(x) = 1 + 2x - x^2$.

ANSWER

$f(x) = 1 + 2x - x^2$, $\frac{df}{dx} = 2 - 2x = 0$ for a stationary point therefore
 $x = 1$. $\frac{d^2f}{dx^2} = -2 < 0$ therefore $x = 1$ is a maximum.