

Practice Questions for Lecture No. 21

Applications of differentiation

Question 1:

If $f(x) = x^2 - 6x + 10$ then find the intervals where the given function is concave up and concave down respectively.

Question 2:

If $f(x) = x^3 + 3x^2$ then find the intervals where the given function is concave up and concave down respectively.

Question 3:

If $f'(x) = 1 + 4x$ then find the intervals on which the given function is increasing or decreasing respectively.

Question 4:

If $f'(x) = 2t - 2$ then find the intervals on which the given function is increasing or decreasing respectively.

Question 5:

Discuss the concavity of the function $f(x) = (4 - x)(x + 4)$ on any interval using second derivative test.