



Questions

Increasing & Decreasing Functions

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Q1) Is the given function increasing or decreasing at the indicated value?

a) $f(x) = x^3 - 2x^2 + 6x + 3$ when $x = 1$

b) $f(x) = 2x^3 + x^2 - 8x - 1$ when $x = -1$

c) $f(x) = x^4 - 2x^3 - 2x^2 - 3$ when $x = 2$

d) $f(x) = 6x - x^4$ when $x = -2$

Q2) The function f is given by $f(x) = x^2 - \frac{3}{x}$.

Is $f(x)$ increasing or decreasing when $x = -1$?

Q3) $f(x) = \frac{1}{3}x^3 - 3x^2 + 10x - 5$. Explain why $f(x)$ is always increasing?

The next question requires the use of Stationary Points (local extrema). If you're not familiar with these check out our video on Stationary Points first, and then come back to this question.

Q4) Find the range of value of x for which the function is increasing

a) $f(x) = \frac{1}{3}x^3 - x^2 - 3x + 2$ Increasing

b) $f(x) = x^3 - 6x + 5$ Increasing