

More Review on 3.1-3.3

For each problem, find all points of absolute minima and maxima on the given closed interval.

1) $y = -x^3 - 6x^2 - 9x + 3$; $[-3, -1]$

2) $y = \frac{8}{x^2 + 4}$; $[0, 5]$

For each problem, find all points of absolute minima and maxima on the given interval.

7) $y = x^3 - 3x^2 - 3$; $(0, 3)$

8) $y = (5x + 25)^{\frac{1}{3}}$; $[-2, 2]$

For each problem, determine if Rolle's Theorem can be applied. If it can, find all values of c that satisfy the theorem. If it cannot, explain why not.

13) $y = \frac{x^2 - x - 12}{x + 4}$; $[-3, 4]$

14) $y = \frac{-x^2 - 2x + 8}{-x + 3}$; $[-4, 2]$

For each problem, determine if the Mean Value Theorem can be applied. If it can, find all values of c that satisfy the theorem. If it cannot, explain why not.

11) $y = -\frac{x^2}{4x + 8}$; $[-3, -1]$

12) $y = \frac{-x^2 + 9}{4x}$; $[1, 3]$

For each problem, find all points of relative minima and maxima.

3) $y = -x^3 - 3x^2 - 1$

4) $y = x^4 - 2x^2 + 3$

5) $y = x^4 - x^2$

6) $y = -\frac{2}{x^2 - 4}$