4.2 Rolle's Theorem and the Mean Value Theorem

Name: Date: June 3, 2015

P 10. Determine whether Rolle's Theorem can be applied $f(x) = x^2 - 8x + 5$ on the closed interval $[2, 6]$, explain. Find all values such that $f'(c) = 0$.

P 12. Determine whether Rolle's Theorem can be applied $f(x) = (x - 4)(x + 2)^2$ on the closed interval $[-2, 4]$, explain. Find all values such that $f'(c) = 0$.

P 21. Determine whether Rolle's Theorem can be applied $f(x) = (x^2 - 2x)e^x$ on the closed interval $[0, 2]$, explain. Find all values such that $f'(c) = 0$.

P 40. Determine whether the Mean Value Theorem can be applied $f(x) = 2x^3$ on the closed interval $[0, 6]$, explain. If the Mean Value Theorem can be applied, find all values of c in the open interval (a, b) such that

$$f'(c) = \frac{f(b) - f(a)}{b - a}$$

P 45. Determine whether the Mean Value Theorem can be applied $f(x) = |2x+1|$ on the closed interval $[-1, 3]$, explain. If the Mean Value Theorem can be applied, find all values of c in the open interval (a, b) such that

$$f'(c) = \frac{f(b) - f(a)}{b - a}$$

P 48. Determine whether the Mean Value Theorem can be applied $f(x) = e^{-3x}$ on the closed interval $[0, 2]$, explain. If the Mean Value Theorem can be applied, find all values of c in the open interval (a, b) such that

$$f'(c) = \frac{f(b) - f(a)}{b - a}$$

P 52. Determine whether the Mean Value Theorem can be applied $f(x) = \arctan(1-x)$ on the closed interval $[0, 1]$, explain. If the Mean Value Theorem can be applied, find all values of c in the open interval (a, b) such that

$$f'(c) = \frac{f(b) - f(a)}{b - a}$$