

Calculus section 4.2 Rolle's Theorem and Mean Value Theorem

Lesson 289 | Calculus AB | IVT, Rolle's theorem and MVT

<https://www.youtube.com/watch?v=o0AmVZLjwa0>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Apply the Mean Value Theorem to $f(x)=x^2+7x$ on $[6,9]$. Verify hypotheses and find every c in the interval.

02

Apply the Mean Value Theorem to $f(x)=x^2+12x$ on $[7,11]$. Verify hypotheses and find every c in the interval.

03

Apply the Mean Value Theorem to $f(x)=x^2+13x$ on $[3,10]$. Verify hypotheses and find every c in the interval.

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04

Apply the Mean Value Theorem to $f(x)=x^2+5x$ on $[12,15]$. Verify hypotheses and find every c in the interval.

05

Apply the Mean Value Theorem to $f(x)=x^2+11x$ on $[10,14]$. Verify hypotheses and find every c in the interval.

06

Apply the Mean Value Theorem to $f(x)=x^2+11x$ on $[12,14]$. Verify hypotheses and find every c in the interval.

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01

Apply the Mean Value Theorem to $f(x)=x^2+7x$ on $[6,9]$. Verify hypotheses and find every c in the interval.

Polynomial: continuous on the closed interval and differentiable inside. Secant slope 22. Set $f'(c)=2c+7=22$; $c=15/2$, strictly between endpoints.

02

Apply the Mean Value Theorem to $f(x)=x^2+12x$ on $[7,11]$. Verify hypotheses and find every c in the interval.

Polynomial: continuous on the closed interval and differentiable inside. Secant slope 30. Set $f'(c)=2c+12=30$; $c=9$, strictly between endpoints.

03

Apply the Mean Value Theorem to $f(x)=x^2+13x$ on $[3,10]$. Verify hypotheses and find every c in the interval.

Polynomial: continuous on the closed interval and differentiable inside. Secant slope 26. Set $f'(c)=2c+13=26$; $c=13/2$, strictly between endpoints.

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04

Apply the Mean Value Theorem to $f(x)=x^2+5x$ on $[12,15]$. Verify hypotheses and find every c in the interval.

Polynomial: continuous on the closed interval and differentiable inside. Secant slope 32. Set $f'(c)=2c+5=32$; $c=27/2$, strictly between endpoints.

05

Apply the Mean Value Theorem to $f(x)=x^2+11x$ on $[10,14]$. Verify hypotheses and find every c in the interval.

Polynomial: continuous on the closed interval and differentiable inside. Secant slope 35. Set $f'(c)=2c+11=35$; $c=12$, strictly between endpoints.

06

Apply the Mean Value Theorem to $f(x)=x^2+11x$ on $[12,14]$. Verify hypotheses and find every c in the interval.

Polynomial: continuous on the closed interval and differentiable inside. Secant slope 37. Set $f'(c)=2c+11=37$; $c=13$, strictly between endpoints.