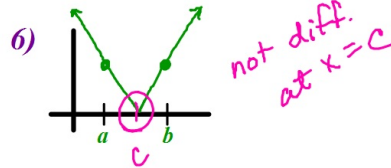
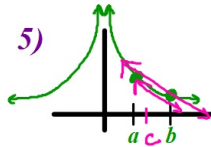
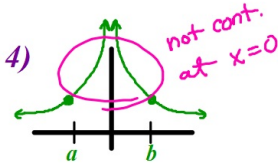
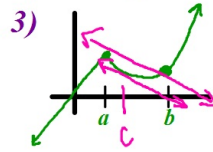
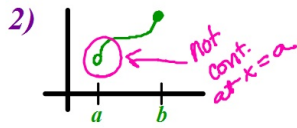
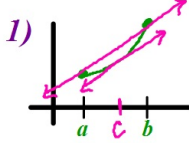


Calculus Warm Up day after 5.4

For each graph, determine if the MVT can be applied on the interval $[a, b]$. If so, draw the secant line and the tangent line. If not, explain why the MVT does not apply.



Find the value of "c" that satisfies the Mean Value Theorem, if applicable.

If the MVT does not apply, then state why.

7) $f(x) = -x^2 + 4x$ on $[0, 3]$

$$\frac{f(3) - f(0)}{3 - 0} = f'(c)$$

$$\frac{[-(3)^2 + 4(3)] - [-(0)^2 + 4(0)]}{3 - 0} = -2c + 4$$

$$1 = -2c + 4$$

$$-3 = -2c$$

$$3/2 = c$$

8) $f(x) = \ln(x - 3)$ on $[4, 6]$

$$\frac{\ln(3) - \ln(1)}{6 - 4} = \frac{1}{c - 3}$$

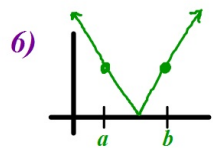
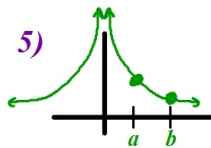
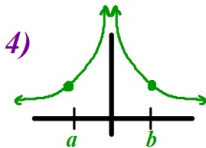
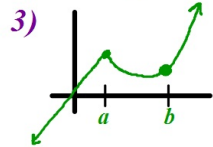
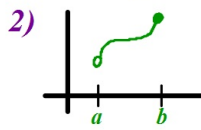
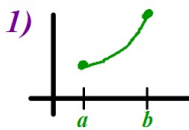
$$\frac{\ln(3)}{2} = \frac{1}{c - 3}$$

$$c - 3 = \frac{2}{\ln 3}$$

$$c = \frac{2}{\ln 3} + 3$$

Calculus Warm Up day after 5.4

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7) $f(x) = -x^2 + 4x$ on $[0, 3]$

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