MATH 201 Your name: _____

Chapter 3 checkpoint!

Chapter 1 scorecard:

Learning target:	DF1	DF2	DFa	DFb	AD2
Your confidence level before starting (0-5):					
Your confidence level after the quiz (0-5):					
The mark you earned on this attempt:	Success! Try again!	Success! Try again!	Success! Try again!	Success! Try again!	Success! Try again!

Chapter 2 scorecard:

Learning target:	DF3	DF4	DF5	DF6	DF7
Your confidence level before starting (0-5):					
Your confidence level after the quiz (0-5):					
The mark you earned on this attempt:	Success! Try again!	Success! Try again!	Success! Try again!	Success! Try again!	Success! Try again!

Chapter 3 scorecard:

Learning target:	AD3	AD4	AD5	AD8	AD9
Your confidence level before starting (0-5):					
Your confidence level after the quiz (0-5):					
The mark you earned on this attempt:	Success! Try again!	Success! Try again!	Success! Try again!	Success! Try again!	Success! Try again!

Before anything else, please do the following:

- Rank your confidence.
- Rip apart the pages.

Then do the quiz! Some reminders:

- Open notes, closed computer.
- If you need more room to write, use the back of the same learning target page, or ask me for some scratch paper.
- Read the questions carefully and make sure you're answering each part.
- Use good grammar for derivative problems.
- Show all your work and explain all your thinking!

Have fun and do your best! I believe in u ♡

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Learning target AD3, version 1

Suppose an oil spill in the ocean formed a circle and was growing at a rate of 53 feet^2/minute. When the oil spill reaches a radius of 35 feet, how fast is the radius of the oil spill growing?

Make sure to do all six steps of the appropriate recipe.

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Learning target AD5, version 1

Consider the function $f(x) = -2x^3 + 9x^2 - 11$.

1. Make a first-derivative sign chart.

2. Use the sign chart to decide whether each local extremum is a local minimum or a local maximum.

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Learning target AD4, version 1

Find the global minimum and global maximum values of the function $f(x) = -2x^3 + 9x^2 - 11$ on the interval $[2, 7]$. Show all your work and explain all your thinking.

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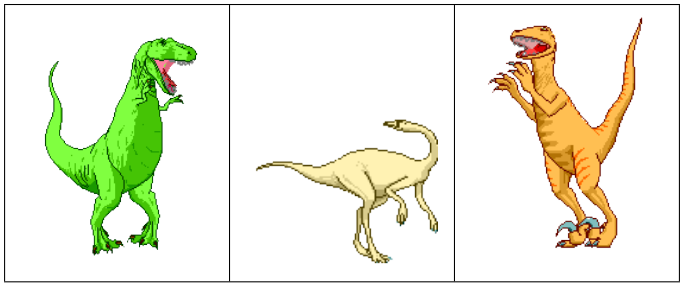
Learning target AD8, version 1

You are a dinosaur rancher, and you need to build pens for your three dinosaurs. You decide to build an electric fence around a rectangular region with total area of 25 square kilometers, and then separate this region into three equal-size rectangular pens with more fencing. What's the minimum length of electric fencing you need to do this?

Make sure to do all six steps of the appropriate recipe. Here is one of your three pictures.



The minimum length of fence is $\underbrace{\qquad}_{\text{number}}\underbrace{\quad}_{\text{units}}$,

and the dimensions of the dinosaur pen that make this work are $\underbrace{\qquad}_{\text{number}}\underbrace{\quad}_{\text{units}} \times \underbrace{\qquad}_{\text{number}}\underbrace{\quad}_{\text{units}}$.

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Learning target AD9, version 1

For each of the limits below, decide whether it is an indeterminate form. Then, find the value of the limit, applying L'Hopital's rule if appropriate.

1. $\lim_{x \to 0} \dfrac{-5 \sin(7x)}{3x}$

2. $\lim_{x \to 0} \dfrac{4 \cos(8x)}{2x - 5}$