

MTH 201: Calculus

sample presentation used for debugging

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Reminders:

- ▶ Post-class activities are to be worked out in ClassKick.
- ▶ **These are not optional!** They contain key concepts that you will be tested on later.
- ▶ There is nothing to turn in — your work is saved automatically on ClassKick.
- ▶ **They are graded check/x on the basis of completeness and effort**, like Daily Prep activities. A check counts as 1 engagement credit.
- ▶ You can work freely with others on these, but please for your own benefit, don't just copy work.
- ▶ If you need help or want Prof. Talbert to check your work, use the "raise hand" feature on ClassKick.

1: Average velocity, alternate take

The position function for a falling ball is $s(t) = 64 - 16(t - 1)^2$, with t in seconds and s in feet. Calculate an expression for the average velocity of the ball on the interval $[2, 2 + h]$. Do algebra to completely simplify the resulting expression. Show your work below (or in a picture you upload and embed here).

2: Using the average velocity expression

Take the simplified expression you came up with and use it to find the average velocity of the ball on the interval $[2, 2.5]$. Show your work. *Spoiler:* The answer is -40 feet per second. If you come up with something else, debug your work on the previous slide as well as on this one.

3: Getting to instantaneous velocity

Use the expression from part 1 of this activity to find the instantaneous velocity of the ball at $t = 2$. Explain your reasoning.

Hint: Think about what you should do with the variable h .

Reflecting

Overall, how comfortable do you feel with the concepts of this lesson? What questions, comments, or concerns do you have about Module 1A so far?