

Math 035 Calculus I

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Monday, Wednesday, Friday 2PM, Reiss 262
Thursday 2PM, Reiss 282

Final Exam : December 20, 9AM-11AM
Midterms : 10/6 and 11/17

What is calculus?

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Latin : *pebbles, small stones used for counting*

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Counting : functions

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small : limits

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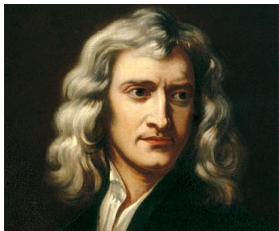
Latin : *pebbles, small stones used for counting*

Counting : functions

small : limits

Algebra : $+$, $-$, \times , \div ...

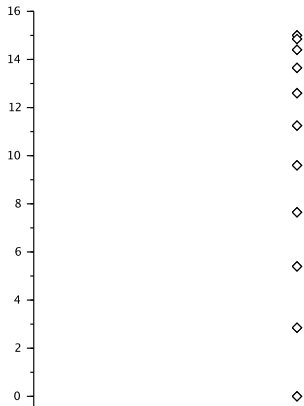
Analysis (calculus) : $\lim_{x \rightarrow 0}$.

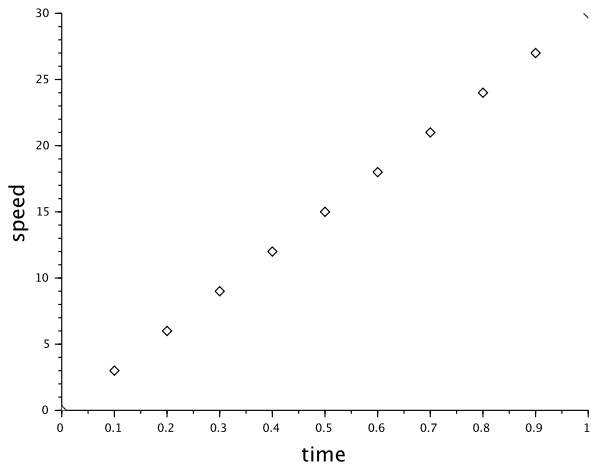


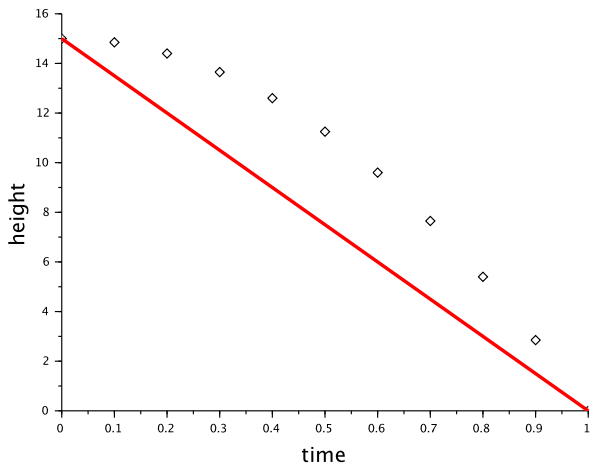
Isaac Newton (1643-1727)



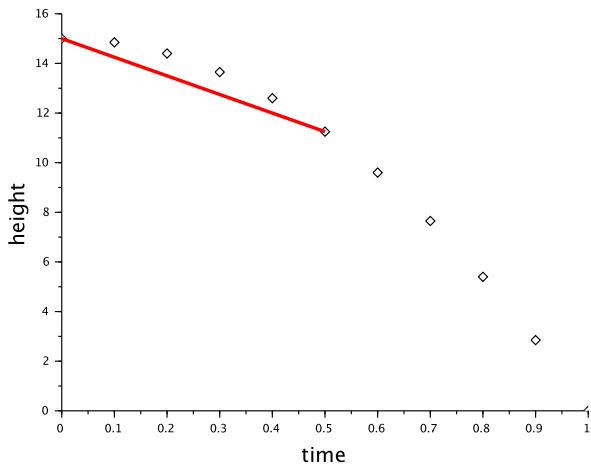
Gottfried Leibniz (1646-1716)



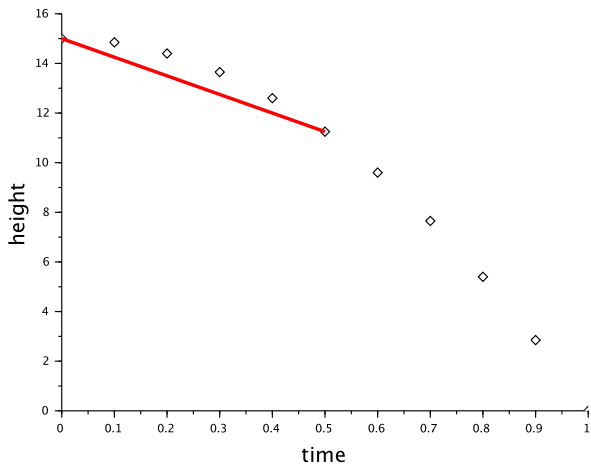




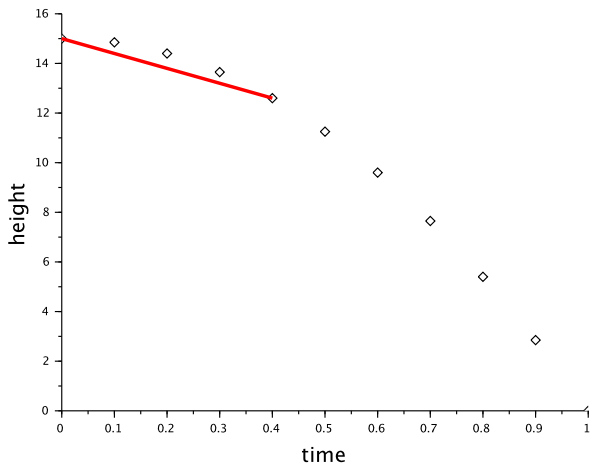
$$\frac{f(1) - f(0)}{1 - 0}$$



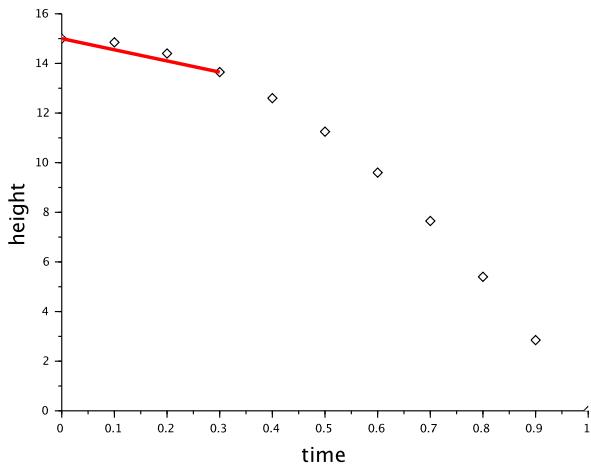
$$\frac{f(0.5) - f(0)}{0.5 - 0}$$



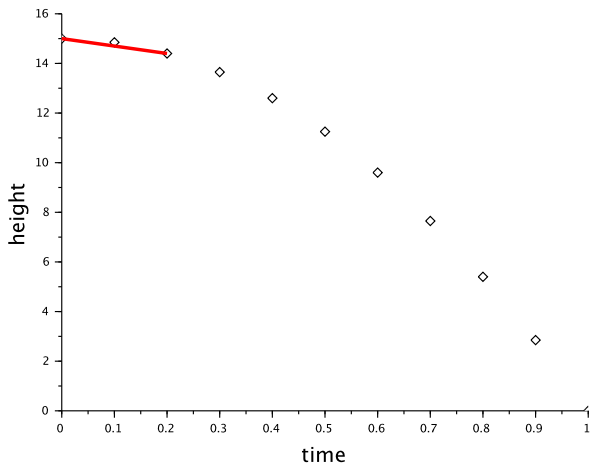
$$\frac{f(0+h) - f(0)}{0+h-0}, \quad h = 0.5$$



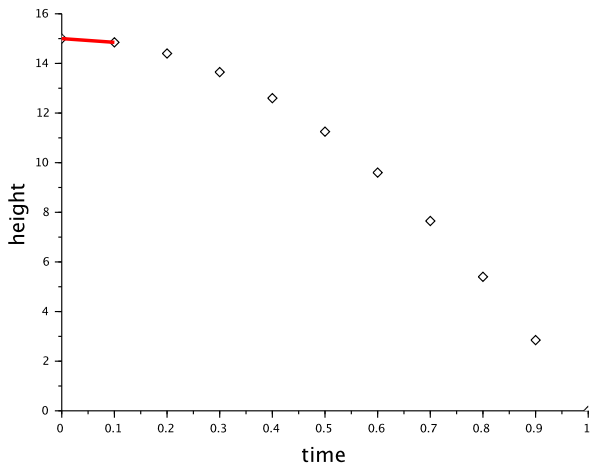
$$\frac{f(0+h) - f(0)}{0+h-0}, \quad h = 0.4$$



$$\frac{f(0+h) - f(0)}{0+h-0}, \quad h = 0.3$$



$$\frac{f(0+h) - f(0)}{0+h-0}, \quad h=0.2$$



$$\frac{f(0+h) - f(0)}{0+h-0}, \quad h = 0.1$$

2nd goal of calculus : surface

1 Functions (recall)

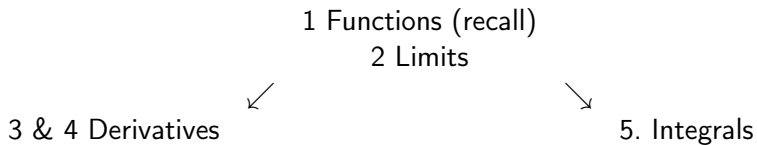
1 Functions (recall)
2 Limits

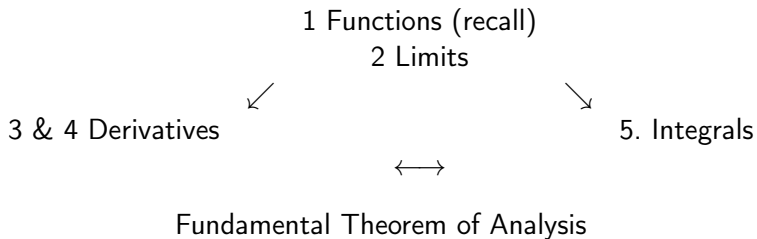
1 Functions (recall)

2 Limits

3 & 4 Derivatives







Grading :

- 1 Final Exam : 30pts
- 2 Mid-terms : 2×15 pts
- 6 Tests : 2pts/test (up to 10pts)
- Homework every week : 20pts
- Participation : 0 time= 0pt, 1 time= 5pts, ≥ 2 times=10pts