

## Opener

It's our last week of PASS!! :(



But, this isn't goodbye just yet! We still have the mock final coming up which I know you're all excited about!

But before we get to any of that, today we'll be looking at the following core concepts:

- Integrating using Romberg integration (Romberg pyramids)
- Integrating using Gaussian Quadrature
- Finding derivatives using Romberg pyramids

At the end of today's session I'll be giving you some time to fill out some online feedback for myself and the PASS program, and there's a chance to win a prize!

**Activity 1 – More integration stuff**

(a) Solve  $\int_3^5 (6x^2 + 2x - 3)dx$  using a three-column Romberg pyramid and using 2-point Gaussian Quadrature.

# PASS

PEER ASSISTED STUDY SESSIONS

**FACIL:** Neil Douglas

**WEEK:** 12

**EMAIL:** neildouglas@cmail.carleton.ca

**OFFICE:** CSAS, 4<sup>th</sup> Floor MacOdrum Library

**COURSE:** ECOR 2606

**OFFICE HOURS:** Fridays 3:00 – 4:00

**(b)** Solve  $\int_1^4 \frac{5x-3}{\sqrt{x}} dx$  using a two-column Romberg pyramid and 3-point Gaussian Quadrature.



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### Activity 2 – Differentiation

You are given the function  $f(x) = 3x^3 - 4x + 1$ . Solve for  $f'(2)$  using forward (2-pt) and backward (3-pt) differentiation, and a two-column Romberg pyramid for each. To start, we'll set  $h=0.5$ .

## Closer

I'd really appreciate if you could all take a few minutes to complete the survey at this link: <https://www.surveymonkey.com/r/K7CDXHR>. It should only take a few minutes, and it is really helpful for myself and the PASS program to receive feedback from you!

That concludes our last workshop! It's been a pleasure working with you all throughout the semester! Note that there will be a bit of a review workshop this Friday and we still have the mock-final coming up in a couple of weeks, so hopefully I see you all there!