Due date:
Friday, 3/19, **due 6pm, submit through Canvas**.

Instructions:
Students are encouraged to work together and discuss the homework problems, however each student must write up the solutions in their own words. Homework solutions should be well-explained, except True/False questions unless requested otherwise.

The format of HW is not restricted, but the PDF file is the preferred one.

Problem 1: In the lecture, we have seen that $p_1(x) = 1$, $p_2(x) = x - \frac{1}{2}$, $p_3(x) = x^2 - x + \frac{1}{6}$ is an orthogonal basis of $\mathcal{P}^{(2)}([0,1])$. Write $p(x) = 2x^2 + x$ as a linear combination of p_1, p_2, p_3.

Problems in [1]:
Pages 170–171, problems 3.5.1(c,d), 3.5.3(a), 3.5.4
Pages 186–187, problems 4.1.1(e,f), 4.1.6, 4.1.16, 4.1.17, 4.1.18(a,b)
Pages 191–192, problems 4.1.21(a,b)
Pages 196–197, problems 4.2.1(b), 4.2.4(b), 4.2.8(a)

References

[1] Peter Olver and Chehrzad Shakiban, Applied Linear Algebra, 2nd Edition