

Homework 16 MATH 304 Section 3

Assigned: Monday, October 27.

Potentially Collected: Monday, November 3.

1. For each of the following (i) find a basis \mathcal{B} for the subspace of V spanned by \mathcal{X} (ii) find a basis \mathcal{C} for V which contains \mathcal{B} .

(a) V is \mathbb{P}_2 and $\mathcal{X} = \{4x^2 - 3x + 7, \quad x^2 + 9x - 2, \quad 7x^2 - 11x + 6\}$

(b) V is \mathbb{P}_3 and $\mathcal{X} = \{x^3 - 1, \quad -2x^3 + x^2 - x + 1, \quad 6x^3 - x^2 + 2x - 1, \quad 3x^2 - x + 1\}$

(c) V is \mathbb{P}_3 and

$$\mathcal{X} = \{x^3 - 3x + 2, \quad x^2 + 2x - 3, \quad -3x^3 - 4x^2 + x + 6, \quad x^3 - 3x^2 - 8x + 7, \quad 2x^3 + x^2 - 6x + 9\}$$