

Math 4A: Quiz 5 Solutions  
November 17, 2015

Names: \_\_\_\_\_ Score: \_\_\_\_\_/10

Circle which section you attend: 8am 4pm 5pm 6pm 7pm

**Directions:** Open book, open note, open neighbor. You will have 20 minutes to complete this quiz.

*Disclaimer: The content and level of difficulty of this quiz are not guaranteed to be in correlation with the midterm nor final examinations in any form.*

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1. Find the coordinate vector of  $\mathbf{p}$  relative to the basis  $S = \{\mathbf{p}_1, \mathbf{p}_2, \mathbf{p}_3\}$  where

(a)  $\mathbf{p} = 4 - 3x + x^2$ ;  $\mathbf{p}_1 = 1$ ,  $\mathbf{p}_2 = x$ ,  $\mathbf{p}_3 = x^2$

(b)  $\mathbf{p} = 2 - x + x^2$ ;  $\mathbf{p}_1 = 1 + x$ ,  $\mathbf{p}_2 = 1 + x^2$ ,  $\mathbf{p}_3 = x + x^2$

2. In each part, use the information in the table to find the dimension of the row space, column space, nullspace of  $A$ , and nullspace of  $A^T$ :

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
Size of A	$3 \times 3$	$3 \times 3$	$3 \times 3$	$5 \times 9$	$9 \times 5$	$4 \times 4$	$6 \times 2$
Rank(A)	3	2	1	2	2	0	2