[4] Compute the determinant of the following 4×4 matrix:

$$\begin{bmatrix} \lambda & 1 & 0 & 0 \\ 1 & \lambda & 1 & 0 \\ 0 & 1 & \lambda & 1 \\ 0 & 0 & 1 & \lambda \end{bmatrix}$$

[4] Compute the determinant of the following 4×4 matrix:

[2] Compute the determinant of the following 4×4 matrix:

$$\begin{bmatrix} 2 & -1 & 0 & 0 \\ -1 & 2 & -1 & 0 \\ 0 & -1 & 2 & -1 \\ 0 & 0 & -1 & 2 \end{bmatrix}$$

[3] Find the determinant of the matrix

2001-05-08 Final

[2] Find the determinants of the matrices

$$A_{3} = \begin{bmatrix} \lambda & 0 & -1 \\ 0 & \lambda - 1 & 0 \\ -1 & 0 & \lambda \end{bmatrix}, \quad A_{4} = \begin{bmatrix} \lambda & 0 & 0 & -1 \\ 0 & \lambda & -1 & 0 \\ 0 & -1 & \lambda & 0 \\ -1 & 0 & 0 & \lambda \end{bmatrix}.$$

What is the determinant of the $n \times n$ matrix A_n with the same pattern?

answer:

work:

[3] Compute the determinant of the following 4×4 matrix:

$$\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 2 & 3 & 4 \\ 1 & 3 & 6 & 10 \\ 1 & 4 & 10 & 20 \end{bmatrix}$$

[6] What is the determinant of the following 8×8 matrix?

[1]	1	1	0	0	0	0	[0
2	1	1	1	0	0	0	0
0	2	1	1	1	0	0	0
0	0	2	1	1	1	0	0
0	0	0	2	1	1	1	0
0	0	0	0	2	1	1	1
0	0	0	0	0	2	1	1
0	0	0	0	0	0	2	1

[3] What is the determinant of the following 4×4 matrix?

[3] What is the determinant of the following 4×4 matrix?

$$\begin{bmatrix} 1 & 2 & a & c \\ 2 & 1 & b & d \\ 0 & 0 & 3 & 4 \\ 0 & 0 & 4 & 3 \end{bmatrix}$$

[6] What is the determinant of the following 6×6 matrix? What is the determinant of the corresponding $n \times n$ matrix?

$$\left[\begin{array}{cccccccccc} 1 & 0 & x & 0 & 0 & 0 \\ 0 & 1 & 0 & x & 0 & 0 \\ 0 & 0 & 1 & 0 & x & 0 \\ 0 & 0 & 0 & 1 & 0 & x \\ x & 0 & 0 & 0 & 1 & 0 \\ 0 & x & 0 & 0 & 0 & 1 \end{array}\right]$$

[4] What are the determinants of the following matrices? What is the determinant of the corresponding $n \times n$ matrix?

$$\begin{bmatrix} 3 & 1 \\ 1 & 3 \end{bmatrix}, \begin{bmatrix} 3 & 1 & 0 \\ 1 & 3 & 1 \\ 0 & 1 & 3 \end{bmatrix}, \begin{bmatrix} 3 & 1 & 0 & 0 \\ 1 & 3 & 1 & 0 \\ 0 & 1 & 3 & 1 \\ 0 & 0 & 1 & 3 \end{bmatrix}, \begin{bmatrix} 3 & 1 & 0 & 0 & 0 \\ 1 & 3 & 1 & 0 & 0 \\ 0 & 1 & 3 & 1 & 0 \\ 0 & 0 & 1 & 3 & 1 \\ 0 & 0 & 0 & 1 & 3 \end{bmatrix}$$

[5] What is the determinant of the following matrix? What is the determinant of the corresponding $n \times n$ matrix?

[1	. 1	[]	1	1 :	1]
2	2 2	2 2	2 2	2	1
3	3 3	3 3	3 2	2	1
4	4	1 3	3 2	2	1
Ŀ	i 4	1 3	3 2	2	1

2007-03-20 Exam 2

[5] For each of the following matrices, find the determinant. What is the general pattern?

$$\begin{bmatrix} 1 & -1 & 0 \\ 1 & 1 & -1 \\ 0 & 1 & 1 \end{bmatrix}, \begin{bmatrix} 1 & -1 & 0 & 0 \\ 1 & 1 & -1 & 0 \\ 0 & 1 & 1 & -1 \\ 0 & 0 & 1 & 1 \end{bmatrix}, \begin{bmatrix} 1 & -1 & 0 & 0 & 0 \\ 1 & 1 & -1 & 0 & 0 \\ 0 & 1 & 1 & -1 & 0 \\ 0 & 0 & 1 & 1 & -1 \\ 0 & 0 & 0 & 1 & 1 \end{bmatrix}$$

2011-03-29 Exam 2

[2] Find the determinant of each of the following matrices.

$$\begin{bmatrix} 1 & 2 & 3 & 4 \\ 0 & 3 & 4 & 5 \\ 0 & 0 & 1 & 3 \\ 0 & 0 & 2 & 9 \end{bmatrix} \qquad \begin{bmatrix} a & b & c & d \\ a & b+1 & c & d \\ a & b & c+1 & d \\ a & b & c & d+1 \end{bmatrix} \qquad \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 4 & 3 & 4 \\ 1 & 2 & 6 & 4 \\ 1 & 2 & 3 & 8 \end{bmatrix}$$

2011-03-29 Exam 2

[6] Find the determinant of the following 5×5 matrix. What is the determinant for the $n \times n$ case?

$$\begin{bmatrix} x & x^2 & 0 & 0 & 0 \\ 1 & x & x^2 & 0 & 0 \\ 0 & 1 & x & x^2 & 0 \\ 0 & 0 & 1 & x & x^2 \\ 0 & 0 & 0 & 1 & x \end{bmatrix}$$

[4] Find the determinant of the matrix

$$A = \begin{bmatrix} 0 & 0 & 1 & a & 0 \\ 1 & b & 0 & 0 & 0 \\ 0 & 0 & 1 & c & 0 \\ 1 & d & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & e \end{bmatrix}.$$

[5] Use Cramer's rule to give a formula for w in the solution to the following system of equations:

$$\begin{bmatrix} 2 & -1 & 0 & 0 \\ -1 & 2 & -1 & 0 \\ 0 & -1 & 2 & -1 \\ 0 & 0 & -1 & 2 \end{bmatrix} \begin{bmatrix} w \\ x \\ y \\ z \end{bmatrix} = \begin{bmatrix} a \\ b \\ c \\ d \end{bmatrix}$$

[5] Use Cramer's rule to give a formula for the solution to the following system of equations:

$$\begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 2a \\ 2b \\ 2c \end{bmatrix}$$

[4] Solve the following system of equations:

$$\begin{bmatrix} 2 & -1 & -1 \\ -1 & 2 & -1 \\ -1 & -1 & 2 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} a \\ b \\ c \end{bmatrix}$$

2003-02-20 Exam 1

[4] Using Cramer's rule, find x satisfying the following system of equations:

$$\begin{bmatrix} 0 & s & t \\ s & t & s \\ t & s & 0 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$$

[4] Using Cramer's rule, find w satisfying the following system of equations:

$$\begin{bmatrix} 1 & 2 & 0 & 0 \\ 1 & 0 & 2 & 0 \\ 1 & 0 & 0 & 2 \\ 1 & 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} w \\ x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 1 \end{bmatrix}$$

[4] Using Cramer's rule, find w satisfying the following system of equations:

$$\begin{bmatrix} 1 & 3 & -1 & -1 \\ 1 & -1 & 3 & -1 \\ 1 & -1 & -1 & 3 \\ 1 & -1 & -1 & -1 \end{bmatrix} \begin{bmatrix} w \\ x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 2 \\ -1 \\ -1 \\ 0 \end{bmatrix}$$

[2] Using Cramer's rule, solve for y in the following system of equations:

$$\begin{bmatrix} A & B & D \\ 0 & C & E \\ 0 & 0 & F \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 0 \end{bmatrix}$$



Exam 2 Linear Algebra, Dave Bayer, March 20, 2007

Name: _

[1] (5 pts)	[2] (5 pts)	[3] (5 pts)	[4] (5 pts)	[5] (5 pts)	TOTAL

Please work only one problem per page, starting with the pages provided. Clearly label your answer. If a problem continues on a new page, clearly state this fact on both the old and the new pages. Do not use calculators or decimal notation.

[1] Use Cramer's rule to solve for *z* in the system of equations

a	1	0]	[x]		[1]	
1	а	1	y	=	1	
0	1	a	$\lfloor z \rfloor$		1	

2007-11-08 Exam 2



Exam 2

Linear Algebra, Dave Bayer, November 8, 2007

Name:

[1] (5 pts)	[2] (5 pts)	[3] (5 pts)	[4] (5 pts)	[5] (5 pts)	[6] (5 pts)	TOTAL

Please work only one problem per page, starting with the pages provided. Clearly label your answer. If a problem continues on a new page, clearly state this fact on both the old and the new pages.

Do not use calculators or decimal notation.

[1] Use Cramer's rule to solve for x in the system of equations

a	1	1]	[x]		[1]
1	2	3	y	=	1
1	3	6	$\lfloor z \rfloor$		1

2011-03-29 Exam 2

[5] Find the ratio x/y for the solution to the matrix equation

$$\begin{bmatrix} a & d & 1 \\ b & e & 1 \\ c & f & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$$

[4] Using Cramer's rule, solve for z in

$$\begin{bmatrix} 1 & 0 & 0 & 1 \\ 1 & 3 & 0 & 1 \\ 1 & 3 & 3 & 1 \\ 1 & 3 & 3 & 3 \end{bmatrix} \begin{bmatrix} w \\ x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 1 \end{bmatrix}$$

Γ	λ	1	1 -	
	0	λ	1	
L	0	0	λ	

$$\left[\begin{array}{rrr}1 & r & s\\0 & 1 & t\\0 & 0 & 1\end{array}\right]$$

$$\left[\begin{array}{rrrrr} a & 1 & 0 & 0 \\ 0 & b & 1 & 0 \\ 0 & 0 & c & 1 \\ 0 & 0 & 0 & d \end{array}\right]$$

$$\begin{bmatrix} 1 & a & 0 & -1 \\ 0 & 1 & b & 0 \\ 0 & 0 & 1 & c \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

Exam 2 Linear Algebra, Dave Bayer, October 19, 2006

Name: ____

[1] (5 pts)	[2] (5 pts)	[3] (5 pts)	[4] (5 pts)	[5] (5 pts)	TOTAL

Please work only one problem per page, starting with the pages provided, and number all continuations clearly. Only work which can be found in this way will be graded.

Please do not use calculators or decimal notation.

[1] What is the formula for the inverse to the following matrix?

$$\left[\begin{array}{rrrr} A & B & D \\ 0 & C & E \\ 0 & 0 & F \end{array}\right]$$

[3] Find the inverse of the following matrix.

[1	0	0	0]
a	1	0	c
b	0	1	d
0	0	0	1

[4] Let L be the linear transformation from \mathbb{R}^3 to \mathbb{R}^3 which rotates one half turn around the axis given by the vector (1,1,1). Find a matrix A representing L with respect to the standard basis

$$\mathbf{e}_1 = \begin{bmatrix} 1\\0\\0 \end{bmatrix}, \quad \mathbf{e}_2 = \begin{bmatrix} 0\\1\\0 \end{bmatrix}, \quad \mathbf{e}_3 = \begin{bmatrix} 0\\0\\1 \end{bmatrix}.$$

Choose a new basis $\{\mathbf{v}_1, \mathbf{v}_2, \mathbf{v}_3\}$ for \mathbb{R}^3 which makes L easier to describe, and find a matrix B representing L with respect to this new basis.

[3] Let *L* be the linear transformation from \mathbb{R}^3 to \mathbb{R}^3 which reflects through the plane *P* defined by x + y + z = 0. In other words, if **u** is a vector lying in the plane *P*, and **v** is a vector perpendicular to the plane *P*, then $L(\mathbf{u} + \mathbf{v}) = \mathbf{u} - \mathbf{v}$. Choose a basis $\{\mathbf{v}_1, \mathbf{v}_2, \mathbf{v}_3\}$ for \mathbb{R}^3 , and find a matrix *A* representing *L* with respect to this basis.

1999-12-16 Final

Final Exam

Linear Algebra, Dave Bayer, December 16, 1999

Name: _____

ID: _____ School: _____

) $[4]$ (5 pts)
) $[8]$ (5 pts) TOTAL
)

Please work only one problem per page, starting with the pages provided, and number all continuations clearly. Only work which can be found in this way will be graded.

Please do not use calculators or decimal notation.

[1] Let L be the linear transformation from \mathbb{R}^3 to \mathbb{R}^3 which projects onto the line (1, 1, 1). In other words, if **u** is a vector in \mathbb{R}^3 , then $L(\mathbf{u})$ is the projection of **u** onto the vector (1,1,1). Choose a basis $\{\mathbf{v}_1,\mathbf{v}_2,\mathbf{v}_3\}$ for \mathbb{R}^3 , and find a matrix A representing L with respect to this basis.

2001-03-29 Exam 2

[5] Let $L : \mathbb{R}^3 \to \mathbb{R}^3$ be the linear transformation such that $L(\mathbf{v}) = \mathbf{v}$ for all \mathbf{v} belonging to the subspace $V \subset \mathbb{R}^3$ defined by x + y = z, and $L(\mathbf{v}) = \mathbf{0}$ for all \mathbf{v} belonging to the subspace $W \subset \mathbb{R}^3$ defined by x = y = z. Find a matrix that represents L with respect to the usual basis

$$\mathbf{e}_1 = (1, 0, 0), \quad \mathbf{e}_2 = (0, 1, 0), \quad \mathbf{e}_3 = (0, 0, 1).$$

2003-04-03 Exam 2

[5] Let $L : \mathbb{R}^3 \to \mathbb{R}^3$ be the linear transformation such that $L(\mathbf{v}) = \mathbf{v}$ for all \mathbf{v} belonging to the subspace $V \subset \mathbb{R}^3$ defined by x + y = 2z, and $L(\mathbf{v}) = 2\mathbf{v}$ for all \mathbf{v} belonging to the subspace $W \subset \mathbb{R}^3$ defined by x = y = 2z. Find a matrix that represents L with respect to the usual basis

$$\mathbf{e}_1 = (1, 0, 0), \quad \mathbf{e}_2 = (0, 1, 0), \quad \mathbf{e}_3 = (0, 0, 1).$$

2004-03-30 Exam 2

[5] Let $L : \mathbb{R}^3 \to \mathbb{R}^3$ be the linear transformation such that $L(\mathbf{v}) = -\mathbf{v}$ for all \mathbf{v} belonging to the subspace $V \subset \mathbb{R}^3$ defined by x + y + z = 0, and $L(\mathbf{v}) = \mathbf{v}$ for all \mathbf{v} belonging to the subspace $W \subset \mathbb{R}^3$ defined by x = y = 0. Find a matrix that represents L with respect to the usual basis

$$\mathbf{e}_1 = (1, 0, 0), \quad \mathbf{e}_2 = (0, 1, 0), \quad \mathbf{e}_3 = (0, 0, 1).$$

2005-03-29 Exam 2

[4] Let $\mathbf{v}_1 = (1,1)$ and $\mathbf{v}_2 = (1,2)$. Let $L : \mathbb{R}^2 \to \mathbb{R}^2$ be the linear transformation such that

$$L(\mathbf{v}_1) = \mathbf{v}_1 + 2\mathbf{v}_2, \quad L(\mathbf{v}_2) = \mathbf{v}_1 + \mathbf{v}_2.$$

Find a matrix that represents L with respect to the usual basis $\mathbf{e}_1 = (1,0), \mathbf{e}_2 = (0,1).$

2005-03-29 Exam 2

[5] Let $L : \mathbb{R}^3 \to \mathbb{R}^3$ be the linear transformation such that $L(\mathbf{v}) = 2\mathbf{v}$ for all \mathbf{v} belonging to the subspace $V \subset \mathbb{R}^3$ defined by x + y + z = 0, and L(1, 1, 1) = (1, 0, -1). Find a matrix that represents L with respect to the usual basis $\mathbf{e}_1 = (1, 0, 0), \mathbf{e}_2 = (0, 1, 0), \mathbf{e}_3 = (0, 0, 1)$.

[5] Let A be the 3×3 matrix determined by

$$A\begin{bmatrix} 0\\1\\1 \end{bmatrix} = \begin{bmatrix} -1\\0\\2 \end{bmatrix}, \qquad A\begin{bmatrix} 1\\0\\1 \end{bmatrix} = \begin{bmatrix} 0\\-1\\2 \end{bmatrix}, \qquad A\begin{bmatrix} 1\\1\\0 \end{bmatrix} = \begin{bmatrix} 1\\1\\2 \end{bmatrix}$$

Find A.

[4] Let $L : \mathbb{R}^3 \to \mathbb{R}^3$ be the linear transformation such that $L(\mathbf{v}) = \mathbf{v}$ for all \mathbf{v} belonging to the subspace defined by x - y + z = 0, and $L(\mathbf{v}) = 0$ for all \mathbf{v} belonging to the subspace defined by x = y = 0. Find a matrix that represents L with respect to the usual basis $\mathbf{e}_1 = (1, 0, 0), \mathbf{e}_2 = (0, 1, 0), \mathbf{e}_3 = (0, 0, 1).$

[3] Find a 3 \times 3 matrix A such that

$$A\begin{bmatrix}1\\1\\0\end{bmatrix} = \begin{bmatrix}1\\1\\0\end{bmatrix}, \quad A\begin{bmatrix}1\\1\\1\end{bmatrix} = \begin{bmatrix}2\\2\\2\end{bmatrix}, \quad A\begin{bmatrix}0\\1\\1\end{bmatrix} = \begin{bmatrix}0\\3\\3\end{bmatrix}$$

2011-02-15 Exam 1

[5] Let $A : \mathbb{R}^2 \to \mathbb{R}^2$ be the matrix which flips the plane \mathbb{R}^2 across the line 3x = y. Find A.

[4] Let

$$v_1 = (1,0,0), v_2 = (1,1,0), v_3 = (0,1,1)$$

Let $L:\mathbb{R}^3\to\mathbb{R}^3$ be a linear map such that

$$L(v_1) = v_2,$$
 $L(v_2) = v_3,$ $L(v_3) = v_1,$

Find the matrix A (in standard coordinates) which represents the linear map L.

$$[6] \text{ Let } A = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}. \text{ Find the eigenvalues and eigenvectors of } A.$$

answer:

work:

2003-05-13 Final

[5] Let
$$A = \begin{bmatrix} 0 & 1 & -1 \\ 0 & -1 & 0 \\ 1 & 1 & -2 \end{bmatrix}$$
. Find the eigenvalues and eigenvectors of A .

answer:

work:

2007-03-20 Exam 2

[4] Find the characteristic polynomial, and a system of eigenvalues and eigenvectors, for the matrix

$$\mathbf{A} = \begin{bmatrix} 1 & 1 \\ 6 & 0 \end{bmatrix}$$

2011-05-10 Final

[5] Find the eigenvalues and corresponding eigenvectors of the matrix

$$\mathsf{A} = \begin{bmatrix} 3 & 2\\ 4 & 1 \end{bmatrix}$$

$$[6] \text{ Let } A = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}. \text{ Find the eigenvalues and eigenvectors of } A.$$

answer:

work:

2003-05-13 Final

[5] Let
$$A = \begin{bmatrix} 0 & 1 & -1 \\ 0 & -1 & 0 \\ 1 & 1 & -2 \end{bmatrix}$$
. Find the eigenvalues and eigenvectors of A .

answer:

work:

2007-03-20 Exam 2

[4] Find the characteristic polynomial, and a system of eigenvalues and eigenvectors, for the matrix

$$\mathbf{A} = \begin{bmatrix} 1 & 1 \\ 6 & 0 \end{bmatrix}$$

2011-05-10 Final

[5] Find the eigenvalues and corresponding eigenvectors of the matrix

$$\mathsf{A} = \begin{bmatrix} 3 & 2\\ 4 & 1 \end{bmatrix}$$

[4] Find A^n for the matrix

$$A = \begin{bmatrix} 2 & -4 \\ 1 & 6 \end{bmatrix}$$

2007-05-10 Final

[5] Find a matrix A so $A^2 = \begin{bmatrix} -2 & 6 \\ -3 & 7 \end{bmatrix}$.

[3] Find A^n for the matrix

$$A = \begin{bmatrix} 2 & 1 \\ 4 & 5 \end{bmatrix}$$

[8] Find a formula for $A^n,$ for the matrix

$$A = \begin{bmatrix} 2 & 0 & 0 \\ 1 & 1 & 1 \\ 1 & -1 & 3 \end{bmatrix}$$

Practice Final A

Linear Algebra, Dave Bayer, April 25, 2012

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Total

Please draw a box around your final answer. Please use each printed sheet (front and back) *only* for that problem, not for any other problem. There are blank sheets at the end of the exam, to give you more room to work. However, your final answer will not be graded unless it appears on the same sheet (front or back) as the printed problem.

[1] Find A^n where A is the matrix

$$\left[\begin{array}{rrr} -1 & 2 \\ 3 & -2 \end{array}\right]$$

[2] Find A^n where A is the matrix

$$\left[\begin{array}{rrr} -1 & 3 \\ 3 & -1 \end{array}\right]$$

Practice Final B

Linear Algebra, Dave Bayer, April 25, 2012

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Total

Please draw a box around your final answer. Please use each printed sheet (front and back) *only* for that problem, not for any other problem. There are blank sheets at the end of the exam, to give you more room to work. However, your final answer will not be graded unless it appears on the same sheet (front or back) as the printed problem.

[1] Find A^n where A is the matrix

[3	2]
2	3

[2] Find A^n where A is the matrix

$$\begin{bmatrix} -2 & -3 \\ 1 & 2 \end{bmatrix}$$

Practice Final C

Linear Algebra, Dave Bayer, April 25, 2012

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Total

Please draw a box around your final answer. Please use each printed sheet (front and back) *only* for that problem, not for any other problem. There are blank sheets at the end of the exam, to give you more room to work. However, your final answer will not be graded unless it appears on the same sheet (front or back) as the printed problem.

[1] Find A^n where A is the matrix

$$\left[\begin{array}{rrr} -1 & -3 \\ 2 & 4 \end{array}\right]$$

[2] Find A^n where A is the matrix

$$\begin{bmatrix} -2 & 2 \\ 2 & 1 \end{bmatrix}$$

Practice Final D

Linear Algebra, Dave Bayer, April 25, 2012

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Total

Please draw a box around your final answer. Please use each printed sheet (front and back) *only* for that problem, not for any other problem. There are blank sheets at the end of the exam, to give you more room to work. However, your final answer will not be graded unless it appears on the same sheet (front or back) as the printed problem.

[1] Find A^n where A is the matrix

$$\left[\begin{array}{rr} -3 & 1 \\ 2 & -2 \end{array}\right]$$

[2] Find A^n where A is the matrix

$$\begin{bmatrix} 4 & 5 \\ 5 & 4 \end{bmatrix}$$

Final Exam

Linear Algebra, Section 003 (TR 11am – 12:15pm), Dave Bayer, May 8, 2012

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Total

Please draw a box around your final answer. Please use each printed sheet (front and back) *only* for that problem, not for any other problem. There are blank sheets at the end of the exam, to give you more room to work. However, your final answer will not be graded unless it appears on the same sheet (front or back) as the printed problem.

[1] Find A^n where A is the matrix

$$\left[\begin{array}{cc} 3 & 3 \\ 4 & -1 \end{array}\right]$$

[2] Find A^n where A is the matrix

$$\begin{bmatrix} 5 & 2 \\ 2 & 5 \end{bmatrix}$$

Final Exam

Linear Algebra, Section 002 (TR 9:10am – 10:25am), Dave Bayer, May 10, 2012

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Total

Please draw a box around your final answer. Please use each printed sheet (front and back) *only* for that problem, not for any other problem. There are blank sheets at the end of the exam, to give you more room to work. However, your final answer will not be graded unless it appears on the same sheet (front or back) as the printed problem.

[1] Find A^n where A is the matrix

$$\left[\begin{array}{rr} -2 & 1 \\ 4 & 1 \end{array}\right]$$

[2] Find A^n where A is the matrix

$$\begin{bmatrix} 3 & 4 \\ 4 & -3 \end{bmatrix}$$