

Name. _____

Scores

_____ **Problem 1.** Periodic harvesting.
_____ **Problem 2.** Cross bow.
_____ **Problem 3.** Gaussian algorithm.
_____ **Problem 4.** Inverse matrix.
_____ **Problem 5.** In-class, October 18.
_____ **Average.**

Applied Differential Equations 2250-1 Version A-M
Midterm Exam 2 In-Class
Friday, 18 October, 2002

Instructions: This in-class exam is 15 minutes. Hand-written or computer-generated notes are allowed, including xerox copies of tables or classroom xerox notes. Calculators are allowed. Books are not allowed.

5. (RREF method)

Let a and b denote constants and consider the system of equations

$$\begin{pmatrix} 1 & a+b & b \\ 0 & 0 & a \\ 1 & a+b & a+b \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 0 \\ a \\ b \end{pmatrix}$$

- (1) Determine those values of a and b such that the system has a solution.
- (2) For each of the values in (1), solve the system.
- (3) For each of the solutions in (2), check the answer.

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Applied Differential Equations 2250-1 Version N-Z
Midterm Exam 2 In-Class
Friday, 18 October, 2002

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5. (RREF method)

Let c and d denote constants and consider the system of equations

$$\begin{pmatrix} 1 & c-d & -d \\ 0 & 0 & c \\ 1 & c-d & c-d \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 0 \\ c \\ -d \end{pmatrix}$$

- (1) Determine those values of c and d such that the system has a solution.
- (2) For each of the values in (1), solve the system.
- (3) For each of the solutions in (2), check the answer.

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Applied Differential Equations 2250-3
Midterm Exam 2 In-Class
Friday, 18 October, 2002

Instructions: This in-class exam is 15 minutes. Hand-written or computer-generated notes are allowed, including xerox copies of tables or classroom xerox notes. Calculators are allowed. Books are not allowed.

5. (RREF method)

Let a and b denote constants and consider the system of equations

$$\begin{pmatrix} 1 & a+b & b \\ 0 & 0 & a \\ 1 & a+b & a+b \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 0 \\ 3a \\ 2b \end{pmatrix}$$

- (1) Determine those values of a and b such that the system has a solution.
- (2) For each of the values in (1), solve the system.
- (3) For each of the solutions in (2), check the answer.