

Name: _____

Score: _____ / 100

Student ID: _____

DO NOT OPEN THE EXAM UNTIL YOU ARE TOLD TO DO SO

	1	2	3	4	5	6	Total
✓							
Score							

INSTRUCTIONS FOR STUDENTS

- Questions are on both sides of the paper. This is an 5 question exam (One extra credit problem can be attempted for a total of 6 questions).
- Students have 50 minutes to complete the exam.
- **PLEASE SHOW ALL WORK.** Any unjustified claims will receive no credit. Clearly box your final answer.
- You **MUST** complete **5** problems for credit. In the above table in the row with the ✓, please mark with a ✓ which problems you want to be graded. If you wish to do a 6th problem for extra credit, please write *EC* in the ✓ row for the problem you wish to be counted for extra credit.
- No notes, textbooks, phones, calculators, etc. are allowed for the exam.
- Each of the 5 questions you choose to do will be graded out of 4 points. The score will then be totaled and multiplied by 5 to get a raw score out of 100 points. If you choose to do a 6th problem for extra credit, the most that will be awarded for that question will be 3 points. So, the highest possible score on this examination is 103 points out of 100.
- The back of the test can be used for scratch work.

GOOD LUCK!

1) Solve the following system of equations for x , y , and z using any method.

$$\begin{cases} x - 3y + 3z = -4 \\ 2x + 3y - z = 15 \\ 4x - 3y - z = 19 \end{cases}$$

2) Solve the following system of equations for x and y .

$$\begin{cases} x^2 + 2y^2 = 9 \\ x^2 - 2y^2 = -7 \end{cases}$$

3) Graph the solution set for the following.

$$\begin{cases} x^2 + y^2 \leq 16 \\ \frac{(x-1)^2}{9} + \frac{y^2}{25} \geq 1 \end{cases}$$

4) Solve the following system using Gaussian elimination or Gauss-Jordan elimination.

$$\begin{cases} x - 3y + z = 4 \\ 2x - 8y + 8z = -2 \\ -6x + 3y - 15z = 9 \end{cases}$$

5) Compute $B \cdot A$ for the following matrices:

$$A = \begin{pmatrix} 1 & 4 & 2 \\ 1 & 3 & 0 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 3 \\ 2 & 1 \\ 1 & 2 \end{pmatrix}$$

6) Solve the following system of equations using the inverse matrix, A^{-1} .

$$\begin{cases} x + y & = 1 \\ x + y + z & = 2 \\ y + z & = 3 \end{cases}$$

THIS PAGE IS LEFT BLANK FOR ANY SCRATCH WORK

END OF TEST