

DAWSON COLLEGE

1. Solve the following system by Gauss – Jordan elimination:

a)

b)

2. Consider the system of linear equations where:

, and

a) Find .

b) Solve the system using .

3. For which values of k will the following system have no solution? Exactly one solution? Infinitely many solutions?

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8.1076.211 BTt63 Tm2 Tr 0.31543 w -35027 37211 BTt1.re perpu.424 ar30.58 509.11 Tm[)]T4BT16.211 BT

4. Find all matrices such that:

a)

b)

5.

8. Given the points

- a) Find the equation of the plane containing the points
- b) Find parametric equations of the line containing the points

9. Given the point , the plane : and the line :

- a) Find the point B on the plane which is closest to the point A and use it to find the distance between the point A and the plane .
- b) Find the point C on the line which is closest to the point and use it to find the distance between the point A and the line .

10. a) Maximize the function subject to constrains:

Where

b) Minimize the function subject to constrains:

Where

ANSWERS:

1. a) b)

9 2 3

2. a) # 1 1 0 b) ~~1110~~

3.

4. a) b)

5. a) True. b) True.

6. a) (i) — (ii) 32 b)

7. a) - - b)

8. a) b)
$$\begin{matrix} x & 1 \\ y & 1 & 2t \\ z & 2 \end{matrix}$$

9. a) - - , — b) —

10. a)
b)