

Applications of Matrices

1. Solving Simultaneous Equations

$$-x + 6y - 2z = 21$$

$$6x - 2y - z = -16$$

$$-2x + 3y + 5z = 24$$

2. Solving Problems that can be Expressed as Simultaneous Equations

A colony of 1000 mole-rats is made up of adult males, adult females and youngsters.

Originally there were 100 more adult females than adult males

After one year

- The number of adult males had increased by 2%
- The number of adult females had increased by 3%
- The number of youngsters had decreased by 4%
- The total number of mole-rats had decreased by 20

3. Finding the possible intersections of 3 planes

A plane is defined as $ax + by + cz = d$

Three planes can:

- a. Meet at a point
- b. Meet on a line
- c. Form a prism
- d. Have two parallel
- e. All be parallel
- f. All be the same plane

