Page 1

$$x + 2y/3 - z/3 = 0$$

1.

$$3x - 2y - z = 0 \quad (1)$$

2.

M_1: Substituting values to satisfy (1)

2: Substitute and solve

3.

$$3x - 2y = 0 \quad \text{and} \quad 2x + 3y + z/3 = 0$$

$$\left\{ \begin{array}{l} 2x + 3y = -3 \\ 3y - 2z = -2 \end{array} \right\}$$

Solving the system:

$$\left\{ \begin{array}{lll} 2 & 3 & -3 \\ 3 & -2 & -2 \end{array} \right\}$$

Result: $x = 0, \quad y = -1$

4.

$$3x - 2y - z = 0 \quad \text{and} \quad 8x + 12 = x + z/3$$

$$x = \frac{2}{3}(y + 1)$$

$$64 + 144y = x + y + z/3$$

$$x = \frac{2}{3}(y + 1), \quad y = 0, \quad z = 2$$

$$M : (0, -1, 0)$$

5.

$$x = \frac{2}{3}(y + 1)$$

$$y = \frac{3}{4}(y + 1)^2$$

$$64 = x + y + z/3$$

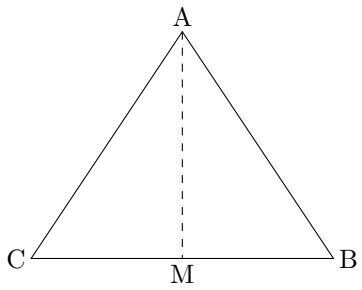
Page 2

Given:

$$A(1,-2), \quad B(4,-4), \quad C(1,-2)$$

1.

Find the midpoint M of AB



$$AM : \frac{x-3}{2} = \frac{y-1}{-1}$$

Answer:
Given:

$$M(2,1,1)$$

$$E : 2x + 3y + 3z = 6$$

$$\text{Vector Normal} \left\{ \begin{array}{c} x = 2 \\ y = 3 \\ z = 6 \end{array} \right\}$$

Solution:
1.

Vector Normal of E is perpendicular to M