



Unidad Educativa Colegio El Carmelo
 Familia Vedrunga
 CURSOS: 5° "A" y "B".
 ASIGNATURA: MATEMÁTICA
 PROFESOR: ENDY MADERA

GUÍA DE EJERCICIOS DE MATEMÁTICA DEL SEGUNDO LAPSO (25-26)

Parte I:

- 1) Representar gráficamente los puntos:
 A(2,3,6); B(5,1,3); C(4,1,9); D(1,7,-3); E(-1,4,2); F(3,-2,3); G(1,-3,-4); H(-4,-2,2); I(-1,-5,-3);
 J(-6,-5,-6)

- 2) Determinar en cada pareja de vectores si son L. I. o L. D.

a) $\vec{m} = (6, -8, -10)$ y $\vec{n} = (-9, 12, 15)$

b) $\vec{p} = (\frac{1}{2}, 6, -3)$ y $\vec{q} = (\frac{2}{3}, 8, -4)$

c) $\vec{e} = (-\frac{1}{6}, \frac{1}{5}, \frac{1}{12})$ y $\vec{d} = (-\frac{5}{9}, \frac{2}{3}, \frac{5}{18})$

d) $\vec{c} = (\sqrt{6}, -\sqrt{15}, -6)$ y $\vec{d} = (-\sqrt{2}, \sqrt{5}, 2\sqrt{3})$

e) $\vec{a} = (\sqrt{6}, \sqrt{15}, \sqrt{2})$ y $\vec{b} = (3\sqrt{2}, 3\sqrt{5}, 2)$

f) $\vec{m} = (-12, -8, 6)$ y $\vec{b} = (3, -2, \frac{3}{2})$

- 2) Expresar el primer vector como combinación lineal de los tres restantes:

a) $\vec{m} = (2, 1, 7)$; $\vec{a} = (2, -1, 3)$; $\vec{b} = (5, 1, 2)$; $\vec{c} = (-1, -4, 2)$

b) $\vec{x} = (0, 4, -8)$; $\vec{y} = (2, -1, 2)$; $\vec{z} = (2, 1, 3)$; $\vec{w} = (2, -1, 4)$

c) $\vec{v} = (2, 3, -5)$; $\vec{b} = (1, -2, -5)$; $\vec{n} = (-2, 4, 3)$; $\vec{p} = (3, -6, 4)$

d) $\vec{i} = (-4, 0, 2)$; $\vec{r} = (3, -1, 5)$; $\vec{s} = (6, 2, 4)$; $\vec{t} = (5, 3, 3)$

e) $\vec{q} = (-3, -1, 10)$; $\vec{d} = (6, -3, 9)$; $\vec{e} = (2, 3, 5)$; $\vec{f} = (4, 1, -3)$

f) $\vec{o} = (-2\sqrt{2}, 0, 2\sqrt{3})$; $\vec{s} = (2, \sqrt{10}, \sqrt{6})$; $\vec{g} = (2\sqrt{6}, -\sqrt{15}, 5)$; $\vec{m} = (-2\sqrt{10}, 1, -\sqrt{15})$

g) $\vec{a} = (\frac{2}{3}, -\frac{5}{4}, 4)$; $\vec{k} = (\frac{4}{7}, -\frac{7}{2}, 8)$; $\vec{m} = (-\frac{3}{2}, \frac{1}{3}, -\frac{5}{6})$; $\vec{u} = (\frac{6}{5}, \frac{4}{9}, 9)$

h) $\vec{a} = (-\frac{6}{7}, -\frac{7}{4}, 4)$; $\vec{k} = (\frac{4}{3}, -\frac{1}{2}, 9)$; $\vec{m} = (-\frac{5}{2}, \frac{2}{3}, -\frac{7}{6})$; $\vec{u} = (\frac{1}{5}, \frac{4}{7}, 9)$

PARTE II: OPERACIONES CON MATRICES:

Dadas las matrices: $A = \begin{pmatrix} 5 & 2 \\ 1 & -9 \end{pmatrix}$ $B = \begin{pmatrix} 6 & 6 \\ 8 & -5 \end{pmatrix}$ $C = \begin{pmatrix} -5 & -5 \\ -\frac{1}{3} & -9 \end{pmatrix}$



$$M = \begin{pmatrix} -6 & -\frac{1}{2} & -8 \\ 0 & -\frac{4}{3} & -1 \\ \sqrt{3} & -9 & 4 \end{pmatrix} \quad I = \begin{pmatrix} \frac{2}{5} & -\frac{3}{7} \\ 1 & \frac{3}{8} \\ 9 & 8 \end{pmatrix} \quad Z = \begin{pmatrix} -\sqrt{2} & \frac{3}{4} & -6 \\ 5 & \frac{3}{5} & -6 \\ \sqrt{3} & -8 & \sqrt{6} \end{pmatrix}$$

$$T = \begin{pmatrix} -6 \\ 2 \\ -4 \end{pmatrix} \quad U = \begin{pmatrix} -4 \\ \sqrt{7} \end{pmatrix} \quad C = (-1 \quad 0 \quad -12)$$

- 1) Hallar:
- a) $A + B$
 - b) $M - Z$
 - c) $A \times U$
 - d) $Z \times T$
 - e) $M \times Z$
 - f) $B \times A$
 - g) $-5M + 2Z$
 - h) $-\frac{2}{3}M + \frac{3}{4}T$

PARTE III: DETERMINANTES:

Halle el determinante en cada caso:

a) $A = \begin{vmatrix} 2 & 3 \\ -4 & 5 \end{vmatrix}$ b) $Z = \begin{vmatrix} 5 & 0 \\ 6 & -3 \end{vmatrix}$ c) $P = \begin{vmatrix} 9 & -6 \\ -3 & -8 \end{vmatrix}$ d) $U = \begin{vmatrix} -\frac{3}{2} & -\frac{1}{4} \\ -7 & 9 \end{vmatrix}$ e) $W = \begin{vmatrix} \frac{5}{3} & 5 \\ -\frac{8}{5} & 3 \end{vmatrix}$

f) $I = \begin{vmatrix} 6 & 1 & 5 \\ 8 & 2 & 7 \\ -4 & 0 & 5 \end{vmatrix}$ g) $Z = \begin{vmatrix} 5 & -3 & 7 \\ 6 & -3 & 5 \\ 2 & -3 & 4 \end{vmatrix}$ h) $T = \begin{vmatrix} 1 & -1 & 1 \\ -2 & -6 & 3 \\ -4 & 4 & 2 \end{vmatrix}$ i) $U = \begin{vmatrix} \frac{3}{2} & 2 & \frac{1}{2} \\ 2 & 7 & -2 \\ 6 & \frac{1}{3} & 4 \end{vmatrix}$

j) $W = \begin{vmatrix} \frac{1}{2} & \frac{1}{3} & -\frac{1}{4} \\ -\frac{1}{3} & 2 & 1 \\ -1 & -\frac{1}{2} & -\frac{3}{2} \end{vmatrix}$ k) $B = \begin{vmatrix} 1 & 1 & 1-t \\ 1 & t & 0 \\ 2 & 4 & t \end{vmatrix}$

l) $N = \begin{vmatrix} x & 1 & 3 \\ 1 & x & 2 \\ 1 & x & 3 \end{vmatrix} = 0$