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**Nombre del trabajo: Problemario**

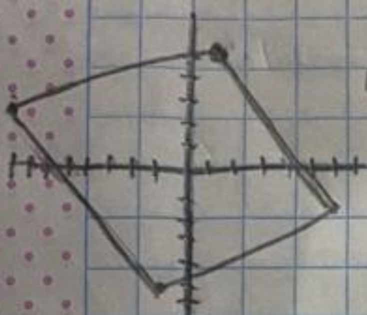
**Materia: Geometria analítica**

**Grado: 3 semestre**

**Grupo: Único**

Formulario.

1 Hallar el área perimetro y semiperimetro del poligono si las coordenadas de sus vertices son A(-8,3) B(1,5) C(7,-1) D(-2,-6).



$$A\ \frac{1}{2}\begin{vmatrix} -8 & 3 \\ 1 & 5 \\ 7 & -1 \\ -2 & -6 \\ -8 & 3 \end{vmatrix}$$

$A\ \frac{1}{2} = (-40 - 1 - 42 - 6) - (48 - 2 + 35 + 3)$

$A\ \frac{1}{2} = (-84 - (-12))$

$A = -77\ \frac{1}{2} = 38.5$

$DAB \sqrt{1-(-8) + 5 - (3)}$
$49 + 4 \sqrt{53} = 7.28$

$DBC \sqrt{7-(1) + -1 - (5)}$
$36 + 36 \sqrt{72} = 8.48$

$DCD \sqrt{-2-(7) + -6 (-1)}$
$81 + 25 \sqrt{106} = 10.29$

$DDA \sqrt{-2-(-8) + -6 - (3)}$
$36 + 81 \sqrt{117} = 10.81$

$S = 36.86 \quad S\ 18.43$

LOVE yourself

2 Demuestra que las rectas que unen los puntos de los lados de un triangulo cuyos vertices son A(−1,5) B(−4,−6) C(−8,−2) dividen a dicho triangulo en cuatro triangulo de áreas iguales.

$A \frac{1}{2} \begin{vmatrix} -1, 5 \\ -4, -6 \\ -8, -2 \\ -1, 5 \end{vmatrix}$ $A \frac{1}{2} (6 + 8 - 40) - (2 + 48 - 20)$

$A \frac{1}{2} = (-20) - (30)$

$A = -56 \quad \frac{1}{2} = -28$

$DAB \sqrt{-4 - (-1)^2 + -6 - (5)^2}$

$9 + 121 \sqrt{130} = 11,40$

$DBC \sqrt{-8 - (-4) + -2 - (-6)}$

$16 + 16 \sqrt{32} = 5.65$

$DCA \sqrt{-8 - (-1) + -2 - (5)}$

$49 + 49 \sqrt{98} = 9.89$

$S = 26.94 \qquad S = 13,47$

3. El área de un triangulo es 3 unidades cuadradas dos de sus vertices son los puntos A(3,1) B(1,−3) el tercer vertice coordenadas del vertice C.

4.- Hallar el área del triangulo cuyos vertices son A (0,0) B(1,7) C(7,4) compruebe el resultado con la formula de Heron para el área del triangulo de sus lados.

$$A\frac{1}{2}\begin{vmatrix} 0,0 \\ 1,7 \\ 7,4 \\ 0,0 \end{vmatrix} \quad \begin{matrix} A\frac{1}{2}(-4) \quad -(6) \\ A = -10 \\ \frac{1}{2} = -5 \end{matrix}$$

$$DAB\sqrt{1-(0)+2-(0)} = 0$$

$$DBC\sqrt{3-(1)+-4-(2)}$$

$$4+36 \quad \sqrt{40} = 6.32$$

$$DCA\sqrt{3-(0)+4-(0)} = 0$$

$$S = 6.32 \qquad S = 6.16$$

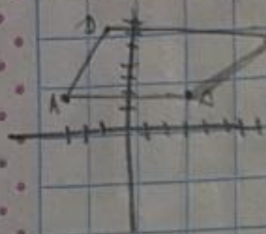
$$A = \sqrt{3.16 \quad (3.16 - 6.32)}$$

$$A = \sqrt{3.16 \quad (3.16)}$$

$$A = \sqrt{9.98}$$

$$A = 3.15$$

5 Hallar el área, perimetro y semiperimetro de la figura formada A(−3,3) B(4,2) C(7,7) D(−1,6)




$A = \frac{1}{2} \begin{vmatrix} -3, 3 \\ 4, 2 \\ 7, 7 \\ -1, 6 \\ -3, 3 \end{vmatrix}$ $\frac{1}{2} = (-6 + 28 + 42 - 3) - (18 - 14 + 14 + 12)$

$A = \frac{1}{2} \quad (61) - (1)$

$A = 60 \quad \frac{1}{2} = 30$

$DAB \sqrt{4 - (-3) + 2 - (3)}$

$49 + 1 = \sqrt{50} = 7.07$

$DBC \sqrt{7 - (4) + 7 - (2)}$

$9 + 25 = \sqrt{34} = 5.83$

$DCD \sqrt{-1 - (7) + 6 - (7)}$

$64 + 1 = \sqrt{65} = 8.06$

$DDA \sqrt{-1 - (-3) + 6 - (3)}$

$4 + 9 = \sqrt{13} = 3.60$

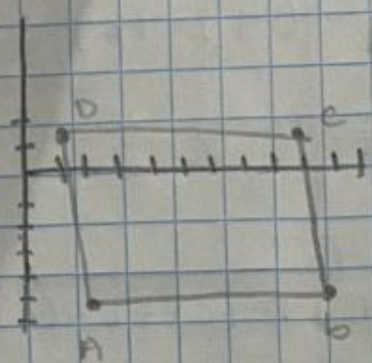
$24.56$

$P = 24.56$

$P = \frac{1}{2}$

$P = 12.28$

7 Demuestra por medio de la pendiente que los Puntos $A(3,-6)$, $B(11,-5)$ $C(9,2)$ $D(1,1)$ son los Vertices de un paralelogramo.




$$DAB\sqrt{11-(3)+-5-(-6)}$$
$$25+1\ \sqrt{26}=5.09$$

$$DBC\sqrt{9-(11)+2-(-5)}$$
$$4+49=\sqrt{53}=7.28$$

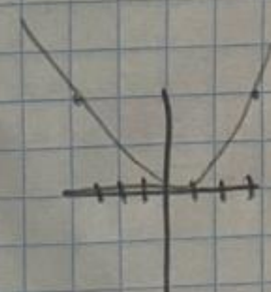
$$DCD\sqrt{1-(9)+1-(2)}$$
$$64+1-\sqrt{65}=8.06$$

$$DDA\sqrt{1-(3)+1-(-6)}$$
$$4+49=\sqrt{53}=7.28$$

8 $x^2-y=0$

$x=0$
$x^2=y$
$0=y$
$y=0$

$y=0$
$x^2=y$
$x=\sqrt{0}$
$x=0$



simetria

$x^2-(-y)=0$
$x^2+y=0$

$(-x)^2-y=0$
$x^2-y=0$

$x^2-y=0$

$x=(0,0)$
$y=(0,3)$

$y=\sqrt{x^2}$

| x | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| y | 0 | 0 | 3 | 0 | 3 | 0 | 0 |

9.- $4x_2 + 5y2 - 20 = 0$

$x = 0$

$5y^2 + 20 = 0$

$y = \sqrt{-\frac{20}{5}}$

$y = 0$

$4x^2 + 20 = 0$

$x = \sqrt{\frac{20}{4}}$

$y = -4$

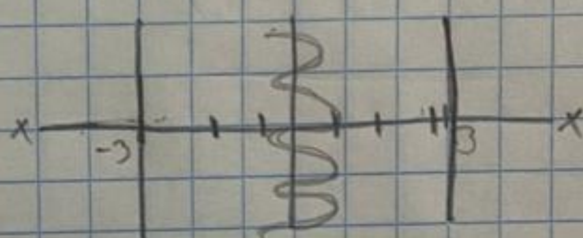
$y = 0$

$x = -5$

$x = 0$

| x | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| y | 1.7 | 0 | 0 | 0 | 0 | 0 | 1.7 |

$y = \sqrt{\frac{-20 - 4(x)^2}{5}}$




10.- $x^2 \, y2 = 16$

$x = 0$

$x^2 + y^2 = 16$

$x = 16/2$

$y = 8$

A(0,8)

$y = 0$

$x^2 = 16$

$x = \sqrt{16}$

$x = 4$

B(4,0) B(4,0)

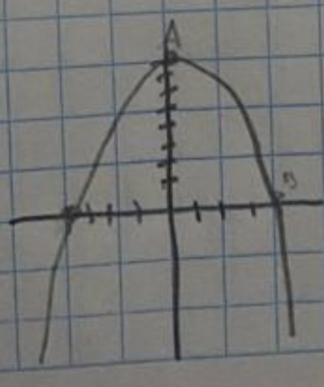
$x^2 + y2 = 16$

$y^2 = 16 - x^2$

$y = \frac{-16 - x^2}{2}$

$y = \frac{16 - (x)^2}{2}$

| X | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| Y | 3.5 | -6 | 7.5 | 8 | 7.5 | 6 | 3.5 |

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