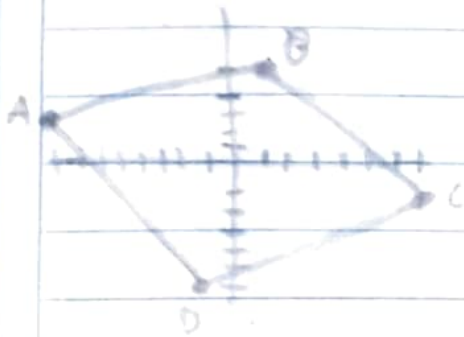


# Formulcerio

Hallar el área, perímetro y semiperímetro del polígono si las coordenadas de sus vértices son A(-8, 3) B(1, 5) C(7, -1) D(-2, -6)



-8	3	A $\frac{1}{2}$ = (-40 - 1 - 10 - 6) - (-48 - 2
1	5	
7	-1	+35 + 21
-2	-6	A $\frac{1}{2}$ = (-89) - (-17)
-8	3	A = -77 $\frac{1}{2}$ = -38.5

$$DAB \sqrt{1 - (-8) + 5 - (3)}$$

$$49 + 4 \sqrt{53} = 7.18$$

$$DBC \sqrt{7 - (1) + (-1) - (5)}$$

$$36 + 36 \sqrt{77} = 8.48$$

$$DCD \sqrt{-2 - (7) + (-6) - (-1)}$$

$$81 + 95 \sqrt{106} = 10.29$$

$$DDA \sqrt{-2 - (-8) + (-6) - (3)}$$

$$36 + 81 \sqrt{17} = 10.81$$

$$S = 36.86 \quad S = 18.43$$

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

$$A \frac{1}{2} \begin{vmatrix} -1 & 5 \\ -4 & -6 \\ -8 & -2 \end{vmatrix} = \frac{1}{2} [(6 + 3 - 40) - (2 + 48 - 24)]$$

$$= \frac{1}{2} [(-26) - (30)]$$

$$= \frac{1}{2} [-56] = -28$$

$$DAB \sqrt{-4 - (-17)^2 + -6 - (-5)^2}$$

$$9 + 121 \sqrt{130} = 11.40$$

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

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

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

$$49 + 49 \sqrt{28} = 9.89$$

$$S = 23.94 \quad S = 13.47$$

3. El área de un triángulo es 3 unidades cuadradas: dos de sus vértices son los puntos  $A(3,1)$   $B(1,-3)$  el tercer vértice  $C$  está situado en el eje  $Y$ . Determina las coordenadas del vértice  $C$ .

4. Hallar el circulo del triangulo cuyos vertices son  $A(0,0)$   $B(1,2)$   $C(3,-1)$   
 Compruebe el resultado con la formula de Heron para el circulo  
 del triangulo de sus lados.

$$A = \begin{vmatrix} 0 & 0 \\ 1 & 2 \\ 3 & -1 \\ 0 & 0 \end{vmatrix} \begin{matrix} A = (-4) - (6) \\ A = -10 \\ A = -5 \end{matrix}$$

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

$$DBC \sqrt{3 - (1) + -1 \cdot (2)} \\ 4 + 36 \cdot \sqrt{40} = 6.32$$

$$DCA \sqrt{3 - (0) + -1 \cdot (0)} = 0$$

$$s = 6.32 \quad \sigma = 3.10$$

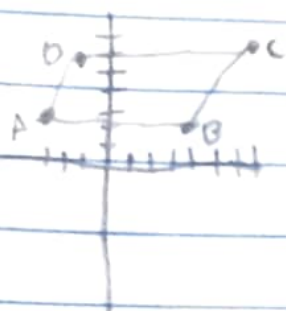
$$A = \sqrt{3.36 (3.36 - 6.32)}$$

$$A = \sqrt{3.36 (3.36)}$$

$$A = \sqrt{9.98}$$

$$A = 3.15$$

5 Hallar el área, perímetro y semiperímetro de la figura formada A(-3,3)  
 B(4,7) C(7,7) D(-1,6)



$$A = \frac{1}{2} \begin{vmatrix} -3 & 3 \\ 4 & 7 \\ 7 & 7 \\ -1 & 6 \\ -3 & 3 \end{vmatrix} \quad \frac{1}{2} = \frac{(-6 + 28 + 42 - 3) - (-13 - 7 + 14 + 12)}{2}$$

$$A = \frac{1}{2} (60) = 30$$

$$DAB = \sqrt{4 - (-3) + 7 - 3}$$

$$9 + 1 = \sqrt{10} = 3.16$$

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

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

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

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

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

$$4 + 9 = \sqrt{13} = 3.61$$

$$24.56$$

$$P = 24.56$$

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

$$p = 12.28$$

6 Hallar el área del triángulo cuyos vértices son  $A(0,0)$   $B(1,2)$   $C(3,-4)$   
 Comprueba con la fórmula de Heron.



0	0	$14(-4) - (6)$ $A = -10 \quad \frac{1}{2} = -5$
1	2	
3	-4	
0	0	

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

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

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

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

$$s = 6.32$$

$$s = 3.16$$

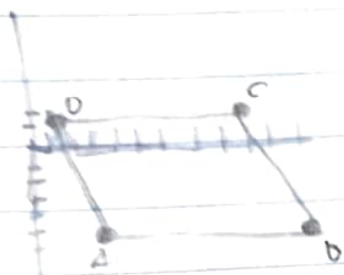
$$A \sqrt{3.16 (3.16 - 0) (3.16 - 6.32) (3.16 - 0)}$$

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

$$A \sqrt{998}$$

$$A = 3.5$$

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



$$DA = \sqrt{(11-1)^2 + (-5-1)^2}$$

$$= 10 + 36 = 46$$

$$DB = \sqrt{(9-11)^2 + (2-(-5))^2}$$

$$= 4 + 49 = 53$$

$$DC = \sqrt{(1-9)^2 + (1-2)^2}$$

$$= 64 + 1 = 65 = 8.06$$

$$DA = \sqrt{(1-3)^2 + (1-(-6))^2}$$

$$= 4 + 49 = 53$$

8  $x^2 - y = 0$

$$x = 0$$

$$x^2 = y$$

$$0 = y$$

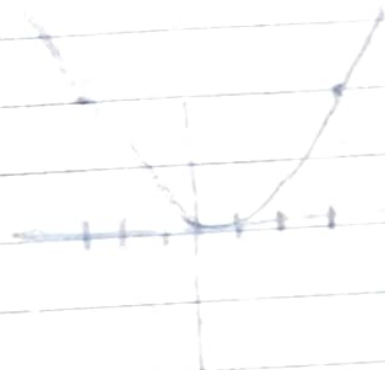
$$y = 0$$

$$y = 0$$

$$x^2 = y$$

$$x = \sqrt{y}$$

$$x = 0$$



2 mediana

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

$$x^2 + y = 0$$

$$x = (3, 0)$$

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

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

$$x^2 - y = 0$$

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

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

$$x^2 - y = 0$$

$$9: 4x^2 + 5y^2 - 20 = 0$$

$$x = 0$$

$$5y^2 + 20 = 0$$

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

$$y = -1$$

$$y = 0$$

$$y = 0$$

$$4x^2 + 20 = 0$$

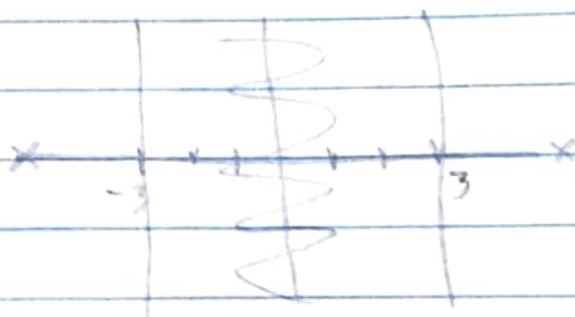
$$x = \frac{\sqrt{-20}}{4}$$

$$x = -5$$

$$x = 0$$

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

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



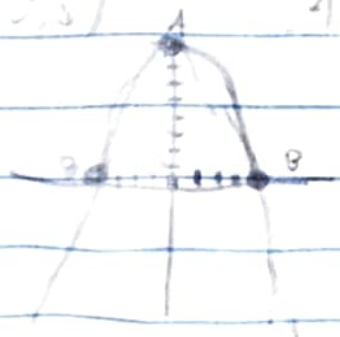
$$10: x^2 + y^2 = 16$$

$$x = 0$$

$$x^2 + y^2 = 16$$

$$y = \pm 4$$

$$A(0, 4)$$



$$y = 0$$

$$x^2 = 16$$

$$x = \pm 4$$

$$x = 4$$

$$B(4, 0)$$

$$x^2 + y^2 = 16$$

$$y^2 = 16 - x^2$$

$$y = \pm \sqrt{16 - x^2}$$

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

x	-3	-2	-1	0	1	2	3
y	3.5	3.6	3.9	4	3.9	3.6	3.5