Cruz Perez Maria del Pilar

Parábola

Trabajo 25.

$P_0\ (5,3)$
$P_1\ (1,-2)$
$P_2\ (8,1)$

$w=1.$

$$\frac{(1-s)^2 P_0 + 2ws(1-s)P_1 + s^2 P_2}{(1-s)^2 + 2ws(1-s) + s^2}$$

$$\frac{(1-1/2)^2(5,3) + 2(1)(1/2)(1-1/2)(1,-2) + (1/2)^2(8,1)}{(1-1/2)^2 + 2(1)(1/2)(1-1/2) + (1/2)^2}$$

$$\frac{\frac{1}{4}(5,3) + (1/2)(1,-2) + (1/4)(8,1)}{(1/4) + (1/2) + (1/4)}$$

$$= \frac{\left(\frac{5}{4}, \frac{3}{4}\right) + \left(\frac{1}{2}, -1\right) + \left(\frac{8}{4}, \frac{1}{4}\right)}{1}$$

$$= \left(\frac{5}{4} + \frac{1}{2} + \frac{8}{4}\right), \left(\frac{3}{4} - 1 + \frac{1}{4}\right)$$

$s=1/2 \quad P_3 = \left(\frac{15}{4}, 0\right)$

$$\frac{(1-s)^2 P_0 + 2ws(1-s)P_1 + s^2 P_2}{(1-s)^2 + 2ws(1-s) + s^2}$$

$$\frac{(1-1/4)^2(5,3) + 2(1)(1/4)(1-1/4)(1,-2) + (1/4)^2(8,1)}{(1-1/4)^2 + 2(1)(1/4)(1-1/4) + (1/4)^2}$$

$$\frac{(9/16)(5,3) + \frac{3}{8}(1,-2) + (1/16)(8,1)}{1}$$

$$\left(\frac{45}{16}, \frac{27}{16}\right) + \left(\frac{3}{8}, -\frac{6}{8}\right) + \left(\frac{8}{16}, \frac{1}{16}\right)$$

$s=1/4 \quad P_4 = \left(\frac{59}{16}, 1\right)$

$s=3/4$

$$\frac{(1-s)^2 P_0 + 2ws(1-s)P_1 + s^2 P_2}{(1-s)^2 + 2ws(1-s) + s^2} =$$

$$= \frac{(1-3/4)^2(5,3) + 2(1)(3/4)(1-3/4)(1,-2) + (3/4)^2(8,1)}{1}$$

$$\frac{1}{16}(5,3) + \frac{3}{8}(1,-2) + \frac{9}{16}(8,1)$$

$$\left(\frac{5}{16}, \frac{3}{16}\right) + \left(\frac{3}{8}, -\frac{6}{8}\right) + \left(\frac{72}{16}, \frac{9}{16}\right) = \left(\frac{83}{16}, 0\right) = P_5$$

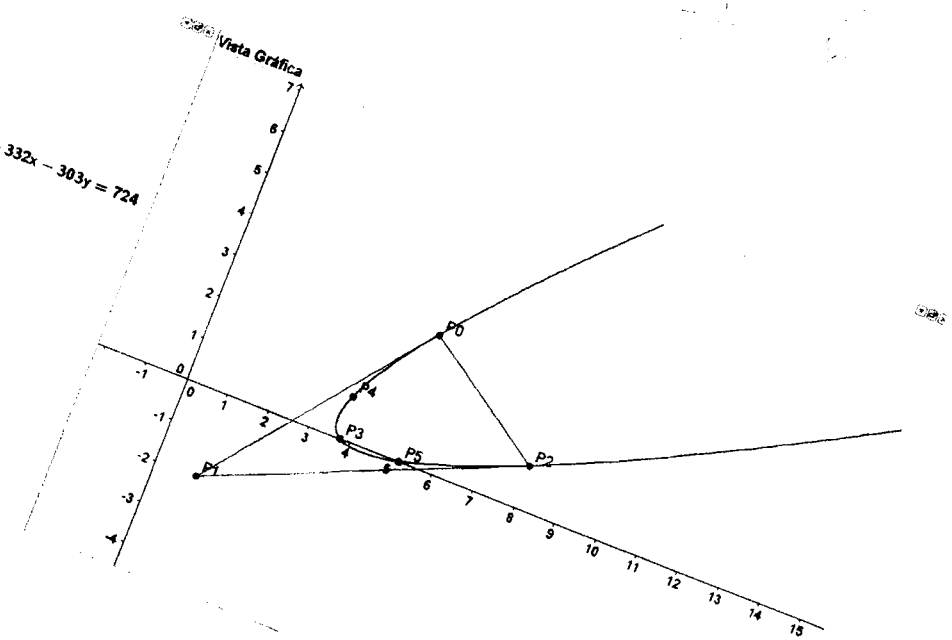
Vista Algebraica

Objetos Libres

- P0 = (5, 3)
- P1 = (1, -2)
- P2 = (8, 1)
- P3 = (4, 0)
- P4 = (4, 1)
- P5 = (5, 0)

Objetos Dependientes

- c : $-37x^2 + 102xy - 70y^2 + 332x - 303y = 724$
- p0 = 8
- p1 = 4
- p2 = 6
- poligono1 = 12



C.P.M.P.

Elipse

$P_0 = (1,8)$
$P_1 \ (-3,5)$
$P_2 \ (4,3)$

$$= \frac{(1-s)^2 P_0 + 2ws(1-s)P_1 + s^2 P_2}{(1-s)^2 + 2ws(1-s) + s^2}$$

$w = 1/2$

$$= \frac{(\frac{1}{4})(1,8) + \frac{1}{4}(-3,5) + (\frac{1}{4})(4,3)}{\frac{1}{4} + \frac{1}{4} + \frac{1}{4}}$$

$$= \frac{\left(\frac{1}{4}, \frac{8}{4}\right) + \left(\frac{-3}{4}, \frac{5}{4}\right) + \left(\frac{4}{4}, \frac{3}{4}\right)}{\frac{3}{4}}$$

$s = 1/2 \quad P_3 = \left(\frac{2}{3}, \frac{16}{3}\right)$

$$\frac{(\frac{9}{16})(1,8) + \frac{3}{16}(-3,5) + \frac{1}{16}(4,3)}{13/16}$$

$$\frac{\left(\frac{9}{16}, \frac{72}{16}\right) + \left(\frac{-9}{16}, \frac{15}{16}\right) + \left(\frac{4}{16}, \frac{3}{16}\right)}{13/16}$$

$$\left(\frac{1}{4}, \frac{45}{8}\right) \Big/ \frac{13}{16} = \left(\frac{4}{13}, \frac{90}{13}\right) P_4$$

$s = 1/4 \quad PS = \dfrac{\frac{1}{16}(1,8) + \frac{3}{16}(-3,5) + \frac{9}{16}(4,3)}{\frac{13}{16}}$

$$\left(\left(\frac{1}{16}, \frac{8}{16}\right) + \left(\frac{-9}{16}, \frac{15}{16}\right) + \left(\frac{36}{16}, \frac{27}{16}\right)\right) \Big/ \frac{13}{16}$$

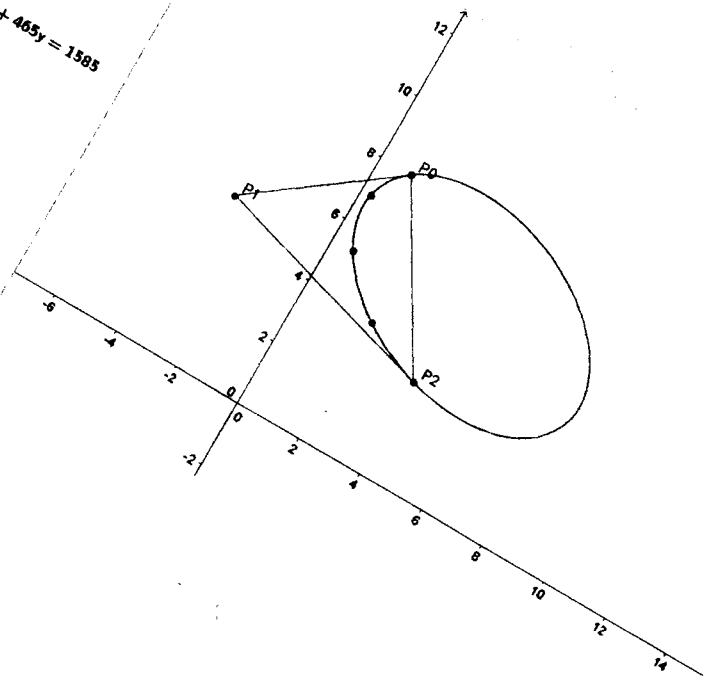
$$\frac{\left(\frac{7}{4}, \frac{25}{8}\right)}{\frac{13}{16}}$$

$s = 3/4 \quad PS = \left(\frac{28}{13}, \frac{50}{13}\right)$

Vista Algebraica

- Objetos Libres
  - P0 = (1, 8)
  - P1 = (-3, 5)
  - P2 = (4, 3)
  - P3 = (1, 5)
  - P4 = (0, 7)
  - P5 = (2, 4)
- Objetos Dependientes
  - a = 6
  - b = 5
  - c = 7
  - d : $-16x^2 - 16xy - 35y^2 + 246x + 465y = 1585$
  - poligono1 = 15

Vista Gráfica



C. P. M. P.

Hipérbola

P_0 $(2,3)$
P_1 $(2,-3)$
P_2 $(10,2)$

$$r(s) = \frac{(1-s)^2 P_0 + 2ws(1-s)P_1 + s^2 P_2}{(1-s)^2 + 2ws(1-s) + s^2}$$

$w = 2$

$$P_3 = \frac{(1/4)(2,3) + 1(2,-3) + (1/4)(10,2)}{\frac{1}{4} + 1 + \frac{1}{4}}$$

$s = 1/2$

$$= \frac{\left(\frac{2}{4}, \frac{3}{4}\right) + (2,-3) + \left(\frac{10}{4}, \frac{2}{4}\right)}{3/2}$$

$$= \frac{5, -7/4}{3/2} = \left(\frac{10}{3}, -\frac{7}{6}\right) \#$$

$s = 1/4$ $\quad P_4 = \dfrac{\left(\frac{9}{16}\right)(2,3) + \frac{3}{4}(2,-3) + \frac{1}{16}(10,2)}{\frac{9}{16} + \frac{3}{4} + \frac{1}{16}}$

$$= \frac{\left(\frac{18}{16}, \frac{27}{16}\right) + \left(\frac{6}{4}, \frac{-9}{4}\right) + \left(\frac{10}{16}, \frac{2}{16}\right)}{11/8}$$

$$= \frac{\frac{13}{4}, -\frac{7}{16}}{11/8} = \left(\frac{26}{11}, -\frac{7}{22}\right) \#$$

$s = 3/4$. $\quad P_5 = \dfrac{\frac{1}{16}(2,3) + \frac{3}{4}(2,-3) + \frac{9}{16}(10,2)}{\frac{1}{16} + \frac{3}{4} + \frac{9}{16}}$

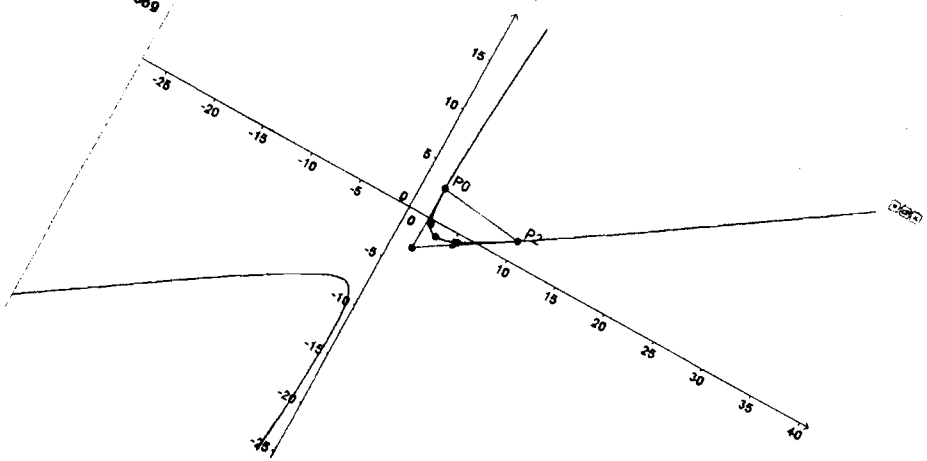
$$= \frac{\left(\frac{2}{16}, \frac{3}{16}\right) + \left(\frac{6}{4}, \frac{-9}{4}\right) + \left(\frac{90}{16}, \frac{18}{16}\right)}{11/8}$$

$$= \frac{\frac{29}{4}, -\frac{15}{16}}{11/8} = \frac{58}{11}, \frac{-15}{22} \#$$

Vista Algebraica

- Objetos Libres
  - P0 = (2, 3)
  - P1 = (2, -3)
  - P2 = (10, 2)
  - P3 = (3, -1)
  - P4 = (2, 0)
  - P5 = (5, -1)
- Objetos Dependientes
  - c : $-606x^2 + 947xy - 81y^2 + 5383x - 1410y = 9069$
  - p0 = 9
  - p1 = 8
  - p2 = 6
  - poligono1 = 24

Vista Gráfica



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