

Map 1: Curvas de Bezier

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1. Curva de bezier de los puntos de control: $P_0(4, 1)$, $P_1(28, 48)$, $P_3(50, 42)$, $P_4(40, 5)$ Grafica:
2. Grafica con segmento de recta $\overline{P_0P_1}$, $\overline{P_1P_2}$, $\overline{P_2P_3}$

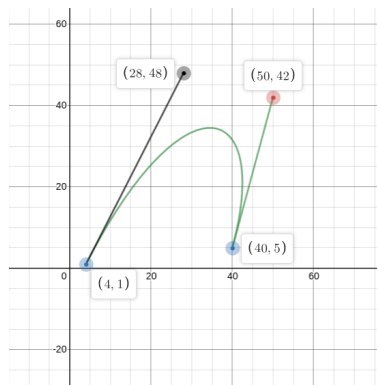
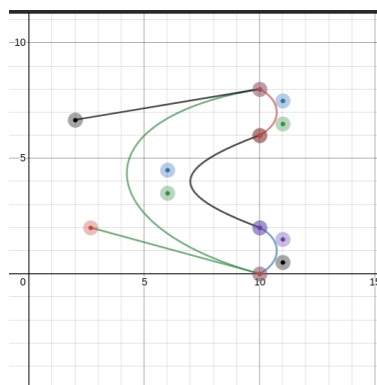


Figure 1: Grafica cubriendo preguntas 1 y 2

3. Demostracion de tangente en P_0 pasa por P_1 y la recta tangente de P_3 pasa por P_2
4. Demostracin con letra C



Ecuaciones que conforman la letra *C*

$$f(x) = 8(1-t)^3 + 20t(1-t)^2 + 6t^2(1-t) + 0t^3 \quad (1)$$

$$f(y) = 10(1-t)^3 + 6t(1-t)^2 + 8t^2(1-t) + 10t^3 \quad (2)$$

$$f(x) = 11(1-t)^3 + 33t(1-t)^2 + 33t^2(1-t) + 10t^3 \quad (3)$$

$$f(y) = 9(1-t)^3 + 22.5t(1-t)^2 + 19.5t^2(1-t) + 6t^3 \quad (4)$$

$$f(x) = 10(1-t)^3 + 12t(1-t)^2 + 12t^2(1-t) + 10t^3 \quad (5)$$

$$f(y) = 6(1-t)^3 + 13.5t(1-t)^2 + 10.5t^2(1-t) + 2t^3 \quad (6)$$

$$f(x) = 10(1-t)^3 + 33t(1-t)^2 + 33t^2(1-t) + 10t^3 \quad (7)$$

$$f(y) = 2(1-t)^3 + 4.5t(1-t)^2 + 1.5t^2(1-t) + 0t^3 \quad (8)$$

5. Apellido del matemtico: *Carter* Letra *C*

$$f(x) = 8(1-t)^3 + 20t(1-t)^2 + 6t^2(1-t) + 0t^3 \quad (9)$$

$$f(y) = 10(1-t)^3 + 6t(1-t)^2 + 8t^2(1-t) + 10t^3 \quad (10)$$

$$f(x) = 11(1-t)^3 + 33t(1-t)^2 + 33t^2(1-t) + 10t^3 \quad (11)$$

$$f(y) = 9(1-t)^3 + 22.5t(1-t)^2 + 19.5t^2(1-t) + 6t^3 \quad (12)$$

$$f(x) = 10(1-t)^3 + 12t(1-t)^2 + 12t^2(1-t) + 10t^3 \quad (13)$$

$$f(y) = 6(1-t)^3 + 13.5t(1-t)^2 + 10.5t^2(1-t) + 2t^3 \quad (14)$$

$$f(x) = 10(1-t)^3 + 33t(1-t)^2 + 33t^2(1-t) + 10t^3 \quad (15)$$

$$f(y) = 2(1-t)^3 + 4.5t(1-t)^2 + 1.5t^2(1-t) + 0t^3 \quad (16)$$

Letra *A*

$$f(x) = (1-t)^3 (12) + 3t(1-t)^2 (12) + 3t^2(1-t) (18) + t^3 (18) \quad (17)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (10) + 3t^2(1-t) (10) + t^3 (0) \quad (18)$$

$$f(x) = (1-t)^3 (13) + 3t(1-t)^2 (13) + 3t^2(1-t) (17) + t^3 (17) \quad (19)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (8) + 3t^2(1-t) (8) + t^3 (0) \quad (20)$$

$$f(x) = (1-t)^3 (12) + 3t(1-t)^2 (14) + 3t^2(1-t) (16) + t^3 (18) \quad (21)$$

$$f(y) = (1-t)^3 (3.5) + 3t(1-t)^2 (4) + 3t^2(1-t) (4) + t^3 (3.5) \quad (22)$$

$$f(x) = (1-t)^3 (12) + 3t(1-t)^2 (14) + 3t^2(1-t) (16) + t^3 (18) \quad (23)$$

$$f(y) = (1-t)^3 (3.5) + 3t(1-t)^2 (3) + 3t^2(1-t) (3) + t^3 (3.5) \quad (24)$$

Letra *R*

$$f(x) = (1-t)^3 (19) + 3t(1-t)^2 (19) + 3t^2(1-t) (19) + t^3 (19) \quad (25)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (3) + 3t^2(1-t) (3) + t^3 (7.5) \quad (26)$$

$$f(x) = (1-t)^3 (19) + 3t(1-t)^2 (24) + 3t^2(1-t) (24) + t^3 (20) \quad (27)$$

$$f(y) = (1-t)^3 (7.5) + 3t(1-t)^2 (7.5) + 3t^2(1-t) (3) + t^3 (3) \quad (28)$$

$$f(x) = (1-t)^3 (20) + 3t(1-t)^2 (22) + 3t^2(1-t) (22) + t^3 (20) \quad (29)$$

$$f(y) = (1-t)^3 (6.5) + 3t(1-t)^2 (6.5) + 3t^2(1-t) (4) + t^3 (4) \quad (30)$$

$$f(x) = (1-t)^3 (20) + 3t(1-t)^2 (20) + 3t^2(1-t) (20) + t^3 (20) \quad (31)$$

$$f(y) = (1-t)^3 (6.5) + 3t(1-t)^2 (6) + 3t^2(1-t) (5) + t^3 (4) \quad (32)$$

$$f(x) = (1-t)^3 (20) + 3t(1-t)^2 (20) + 3t^2(1-t) (20) + t^3 (20) \quad (33)$$

$$f(y) = (1-t)^3 (6.5) + 3t(1-t)^2 (6) + 3t^2(1-t) (5) + t^3 (4) \quad (34)$$

$$f(x) = (1-t)^3 (20) + 3t(1-t)^2 (20) + 3t^2(1-t) (20) + t^3 (20) \quad (35)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (2) + 3t^2(1-t) (2) + t^3 (2) \quad (36)$$

$$f(x) = (1-t)^3 (20) + 3t(1-t)^2 (21) + 3t^2(1-t) (22) + t^3 (22.5) \quad (37)$$

$$f(y) = (1-t)^3 (3) + 3t(1-t)^2 (2) + 3t^2(1-t) (1) + t^3 (0) \quad (38)$$

$$f(x) = (1-t)^3 (20) + 3t(1-t)^2 (21) + 3t^2(1-t) (21.5) + t^3 (21.7) \quad (39)$$

$$f(y) = (1-t)^3 (2) + 3t(1-t)^2 (1) + 3t^2(1-t) (0.5) + t^3 (0) \quad (40)$$

Letra T

$$f(x) = (1-t)^3 (24) + 3t(1-t)^2 (26) + 3t^2(1-t) (27) + t^3 (28) \quad (41)$$

$$f(y) = (1-t)^3 (6) + 3t(1-t)^2 (6) + 3t^2(1-t) (6) + t^3 (6) \quad (42)$$

$$f(x) = (1-t)^3 (24) + 3t(1-t)^2 (26) + 3t^2(1-t) (27) + t^3 (28) \quad (43)$$

$$f(y) = (1-t)^3 (6) + 3t(1-t)^2 (6) + 3t^2(1-t) (6) + t^3 (6) \quad (44)$$

$$f(x) = (1-t)^3 (24) + 3t(1-t)^2 (26) + 3t^2(1-t) (27) + t^3 (28) \quad (45)$$

$$f(y) = (1-t)^3 (5) + 3t(1-t)^2 (5) + 3t^2(1-t) (5) + t^3 (5) \quad (46)$$

$$f(x) = (1-t)^3 (24) + 3t(1-t)^2 (23.5) + 3t^2(1-t) (23.5) + t^3 (24) \quad (47)$$

$$f(y) = (1-t)^3 (6) + 3t(1-t)^2 (5.75) + 3t^2(1-t) (5.25) + t^3 (5) \quad (48)$$

$$f(x) = (1-t)^3 (28) + 3t(1-t)^2 (28.5) + 3t^2(1-t) (28.5) + t^3 (28) \quad (49)$$

$$f(y) = (1-t)^3 (6) + 3t(1-t)^2 (5.75) + 3t^2(1-t) (5.25) + t^3 (5) \quad (50)$$

$$f(x) = (1-t)^3 (25) + 3t(1-t)^2 (25) + 3t^2(1-t) (25) + t^3 (25) \quad (51)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (4) + 3t^2(1-t) (6) + t^3 (7) \quad (52)$$

$$f(x) = (1-t)^3 (27) + 3t(1-t)^2 (27) + 3t^2(1-t) (27) + t^3 (27) \quad (53)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (4) + 3t^2(1-t) (6) + t^3 (7) \quad (54)$$

$$f(x) = (1-t)^3 (25) + 3t(1-t)^2 (25.5) + 3t^2(1-t) (26.5) + t^3 (27) \quad (55)$$

$$f(y) = (1-t)^3 (7) + 3t(1-t)^2 (7.5) + 3t^2(1-t) (7.5) + t^3 (7) \quad (56)$$

$$f(x) = (1-t)^3 (29) + 3t(1-t)^2 (29) + 3t^2(1-t) (35) + t^3 (35) \quad (57)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (10) + 3t^2(1-t) (10) + t^3 (0) \quad (58)$$

Letra A

$$f(x) = (1-t)^3 (29) + 3t(1-t)^2 (29) + 3t^2(1-t) (35) + t^3 (35) \quad (59)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (10) + 3t^2(1-t) (10) + t^3 (0) \quad (60)$$

$$f(x) = (1-t)^3 (30) + 3t(1-t)^2 (30) + 3t^2(1-t) (34) + t^3 (34) \quad (61)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (8) + 3t^2(1-t) (8) + t^3 (0) \quad (62)$$

$$f(x) = (1-t)^3 (29) + 3t(1-t)^2 (31) + 3t^2(1-t) (33) + t^3 (35) \quad (63)$$

$$f(y) = (1-t)^3 (3.5) + 3t(1-t)^2 (4) + 3t^2(1-t) (4) + t^3 (3.5) \quad (64)$$

$$f(x) = (1-t)^3 (29) + 3t(1-t)^2 (31) + 3t^2(1-t) (33) + t^3 (35) \quad (65)$$

$$f(y) = (1-t)^3 (3.5) + 3t(1-t)^2 (4) + 3t^2(1-t) (4) + t^3 (3.5) \quad (66)$$

$$f(x) = (1-t)^3 (29) + 3t(1-t)^2 (31) + 3t^2(1-t) (33) + t^3 (35) \quad (67)$$

$$f(y) = (1-t)^3 (3.5) + 3t(1-t)^2 (3) + 3t^2(1-t) (3) + t^3 (3.5) \quad (68)$$

Letra N

$$f(x) = (1-t)^3 (36) + 3t(1-t)^2 (39) + 3t^2(1-t) (42) + t^3 (44) \quad (69)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (8) + 3t^2(1-t) (8) + t^3 (0) \quad (70)$$

$$f(x) = (1-t)^3 (38) + 3t(1-t)^2 (39) + 3t^2(1-t) (41) + t^3 (42) \quad (71)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (5) + 3t^2(1-t) (5) + t^3 (0) \quad (72)$$

$$f(x) = (1-t)^3 (36) + 3t(1-t)^2 (36) + 3t^2(1-t) (36) + t^3 (36) \quad (73)$$

$$f(y) = (1-t)^3 (0) + 3t(1-t)^2 (3) + 3t^2(1-t) (3) + t^3 (6) \quad (74)$$

$$f(x) = (1-t)^3 (37) + 3t(1-t)^2 (37) + 3t^2(1-t) (37) + t^3 (37) \quad (75)$$

$$f(y) = (1-t)^3 (2.4) + 3t(1-t)^2 (3) + 3t^2(1-t) (3) + t^3 (6) \quad (76)$$

$$f(x) = (1-t)^3 (36) + 3t(1-t)^2 (36.25) + 3t^2(1-t) (36.75) + t^3 (37) \quad (77)$$

$$f(y) = (1-t)^3 (6) + 3t(1-t)^2 (6.25) + 3t^2(1-t) (6.25) + t^3 (6) \quad (78)$$

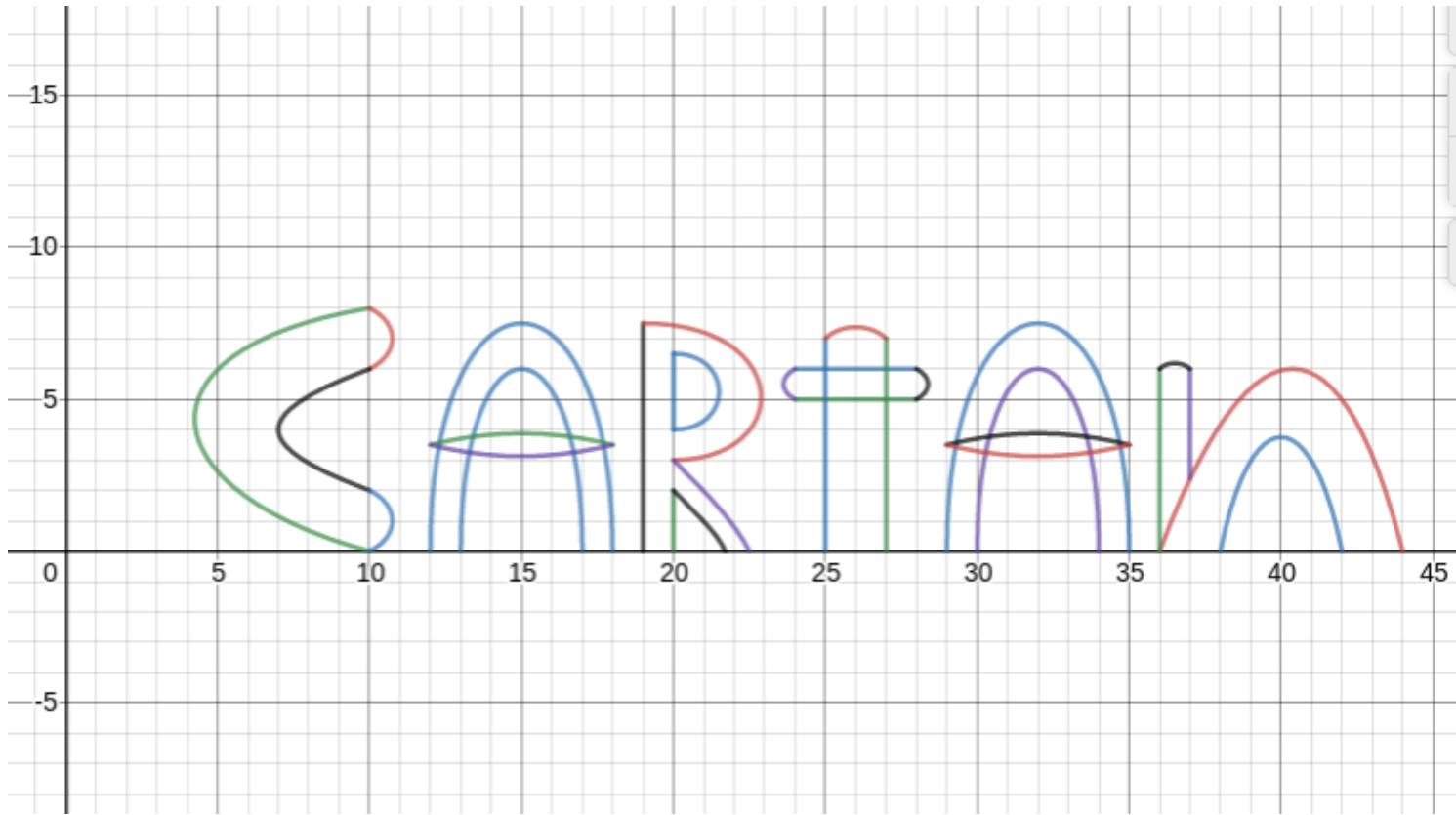


Figure 2: Nombre de Henri Cartan