1.

Q(x1, x2, x3, x4) = 12x1 + 5x2 + 15x3 + 10x4 🡪 max.

CT-1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| xb | cb | P0 | c1 = 12 | c2 = 5 | c3 = 15 | c4 = 10 | c5 = 0 | c6 = 0 | c7 = 0 | c8 = 0 | c9 = 0 |  |
| P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 |
|  | 0 | 1500 | 5 | 1 | 9 | 12 | 1 | 0 | 0 | 0 | 0 | 166,67 |
|  | 0 | 1000 | 2 | 3 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 250 |
|  | 0 | 800 | 3 | 2 | 5 | 10 | 0 | 0 | 1 | 0 | 0 | 160 |
|  | 0 | 40 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | ∞ |
|  | 0 | 130 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | ∞ |
| Q | = |  | -12 | -5 | -15 | -10 | 0 | 0 | 0 | 0 | 0 |  |

CT-2

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| xb | cb | P0 | c1 = 12 | c2 = 5 | c3 = 15 | c4 = 10 | c5 = 0 | c6 = 0 | c7 = 0 | c8 = 0 | c9 = 0 |  |
| P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 |
|  | 0 | 60 | -0,4 | -2,6 | 0 | -6 | 1 | 0 | -1,8 | 0 | 0 | -150 |
|  | 0 | 360 | -0,4 | 1,4 | 0 | -7 | 0 | 1 | -0,8 | 0 | 0 | -900 |
|  | 15 | 160 | 0,6 | 0,4 | 1 | 2 | 0 | 0 | 0,2 | 0 | 0 | 266,67 |
|  | 0 | 40 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 40 |
|  | 0 | 130 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | ∞ |
| Q | = |  | -3 | 1 | 0 | 20 | 0 | 0 | 3 | 0 | 0 |  |

CT-3

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| xb | cb | P0 | c1 = 12 | c2 = 5 | c3 = 15 | c4 = 10 | c5 = 0 | c6 = 0 | c7 = 0 | c8 = 0 | c9 = 0 |  |
| P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 |
|  | 0 | 76 | 0 | -2,6 | 0 | -6 | 1 | 0 | -1,8 | 0,4 | 0 |  |
|  | 0 | 376 | 0 | 1,4 | 0 | -7 | 0 | 1 | -0,8 | 0,4 | 0 |  |
|  | 15 | 136 | 0 | 0,4 | 1 | 2 | 0 | 0 | 0,2 | -0,6 | 0 |  |
|  | 12 | 40 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |  |
|  | 0 | 130 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  |
| Q | = | 2520 | 0 | 1 | 0 | 20 | 0 | 0 | 3 | 3 | 0 |  |

Q = 2520

X\* = (40, 0, 136, 0)

2.

Зображення, що містить текст, Шрифт, почерк, знімок екрана

Автоматично згенерований опис

Зображення, що містить знімок екрана, текст, число, ряд

Автоматично згенерований опис

Рис. 1 Введені в Desmos рівняння (змінну *х* вважати за *х1*, змінну *у* вважати за *х2*)

Зображення, що містить ряд, Графік, схема, Паралель

Автоматично згенерований опис

Рис. 2 Отриманий в Desmos графік і точки перетину

F(1, 3) = 3 + 9 = 12 🡪 max

F(3, 1) = 9 + 3 = 12 🡪 max

F(0.33333 , 3) = 0.99999 + 9 = 9.99999

F(3, 0.2) = 9 + 0.6 = 9.6

F(1.14286, 0.57143) = 3.42858 + 1.71429 = 5,14287 🡪 min

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| xb | cb | P0 | c1 = 4 | c2 = 5 | c3 = 0 | c4 = 0 | c5 = 0 |  |
| P1 | P2 | P3 | P4 | P5 |
|  | 0 | 500 | 1 | 2 | 1 | 0 | 0 | 250 |
|  | 0 | 750 | 2 | 1 | 0 | 1 | 0 | 750 |
|  | 0 | 200 | 1 | 1 | 0 | 0 | 1 | 200 |
| Q | = |  | -4 | -5 | 0 | 0 | 0 |  |

CT-2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| xb | cb | P0 | c1 = 4 | c2 = 5 | c3 = 0 | c4 = 0 | c5 = 0 |  |
| P1 | P2 | P3 | P4 | P5 |
|  | 0 | 100 | -1 | 0 | 1 | 0 | -2 |  |
|  | 0 | 550 | 1 | 0 | 0 | 1 | -1 |  |
|  | 5 | 200 | 1 | 1 | 0 | 0 | 1 |  |
| Q | = | 1000 | 1 | 0 | 0 | 0 | 5 |  |

Q = 1000

X\* = (0, 200)