Tarea #1

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Ejercicio 1

1.1. Datos

- r = 5
- c1 = 2
- c2 = 3
- c3 = 5
- k = 8

Cantidad Optima (Q)

$$Q = \sqrt{2}\sqrt{\frac{c_3 r(c_1+c_2)}{c_1 c_2\left(1-\frac{r}{k}\right)}}$$

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

$$Q = 10{,}541$$

Cantidad Maxima en inventario (S)

$$S = \sqrt{2}\sqrt{\frac{c_2 c_3 r\left(1-\frac{r}{k}\right)}{c_1(c_1+c_2)}}$$

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

$$S = 2{,}372$$

Costo (C)

$$C = \sqrt{2}\sqrt{\frac{c_1 c_2 c_3 r\left(1-\frac{r}{k}\right)}{c_1+c_2}}$$

$$C = \sqrt{2}\sqrt{\frac{(2)(3)(5)(5)\left(1-\frac{(5)}{(8)}\right)}{(2)+(3)}}$$
$$C = 4{,}743$$

Cantidad maxima de faltantes (D)

$$D = Q - S$$

$$D = (10 * sqrt(10)/3) - (3 * sqrt(10)/4)$$
$$D = 8{,}169$$

tiempo 2 (t2)

$$t2 = \sqrt{2}\sqrt{\frac{c_2 c_3\left(1-\frac{r}{k}\right)}{c_1 r(c_1+c_2)}}$$

$$t2 = \sqrt{2}\sqrt{\frac{(3)(5)\left(1-\frac{(5)}{(8)}\right)}{(2)(5)((2)+(3))}}$$
$$t2 = 0{,}474$$

tiempo 1 (t1)

$$t1 = \sqrt{\frac{rt_2}{k-r}}$$

$$t1 = \sqrt{\frac{(5)(3*sqrt(10)/20)}{(8)-(5)}}$$
$$t1 = 0{,}889$$

tiempo 3 (t3)

$$t3 = \sqrt{2}\sqrt{\frac{c_1 c_3\left(1-\frac{r}{k}\right)}{c_2 r(c_1+c_2)}}$$

$$t3 = \sqrt{2}\sqrt{\frac{(2)(5)\left(1-\frac{(5)}{(8)}\right)}{(3)(5)((2)+(3))}}$$
$$t3 = 0{,}316$$

tiempo 4 (t4)

$$t4 = \sqrt{\frac{rt_3}{k-r}}$$

$$t4 = \sqrt{\frac{(5)(sqrt(10)/10)}{(8)-(5)}}$$
$$t4 = 0{,}726$$