Используя геометрический метод,

решить задачу линейного программирования.

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| 1. $F\left(x\right)=3x\_{1}+x\_{2}⇒max$

$$\left\{\begin{array}{c}2x\_{1}+x\_{2}\leq 5;\\x\_{1}-x\_{2}+1\geq 0;\\x\_{1}-2x\_{2}+3\geq 0;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $F\left(x\right)=3x\_{1}-2x\_{2}⇒max$

$$\left\{\begin{array}{c}-3x\_{1}+x\_{2}\leq 0;\\-x\_{1}+2x\_{2}+2\geq 0;\\-2x\_{1}-x\_{2}+7\geq 0;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $F\left(x\right)=2x\_{1}+3x\_{2}⇒min$

$$\left\{\begin{array}{c}-2x\_{1}+x\_{2}+3\geq 0;\\x\_{1}+x\_{2}\geq 2;\\-x\_{1}+2x\_{2}-2\leq 0;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $F\left(x\right)=x\_{1}+x\_{2}⇒max$

$$\left\{\begin{array}{c}x\_{1}+2x\_{2}\leq 14;\\-5x\_{1}+3x\_{2}\leq 15;\\4x\_{1}+6x\_{2}\geq 24;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $F\left(x\right)=x\_{1}+2x\_{2}⇒max$

$$\left\{\begin{array}{c}4x\_{1}-2x\_{2}\leq 12;\\-x\_{1}+3x\_{2}-3\leq 3;\\2x\_{1}+4x\_{2}-10\leq 6;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $F\left(x\right)=-2x\_{1}+x\_{2}⇒min$

$$\left\{\begin{array}{c}3x\_{1}-2x\_{2}+15\leq 27;\\-x\_{1}+2x\_{2}\leq 8;\\2x\_{1}+3x\_{2}-2\geq 4;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $F\left(x\right)=-x\_{1}+2x\_{2}+4⇒min$

$$\left\{\begin{array}{c}2x\_{1}-x\_{2}-2\leq 4;\\x\_{1}+2x\_{2}\geq 8;\\3x\_{1}-x\_{2}-5\leq 5;\\-x\_{1}+3x\_{2}-1\leq 14;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $F\left(x\right)=2x\_{1}-5x\_{2}⇒min$

$$\left\{\begin{array}{c}-x\_{1}+x\_{2}+3\leq 7;\\2x\_{1}+x\_{2}+11\leq 17;\\-3x\_{1}+x\_{2}+24\geq 18;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $F\left(x\right)=-5x\_{1}-6x\_{2}⇒min$

 $\left\{\begin{array}{c}5x\_{1}-7x\_{2}\leq 12;\\3x\_{1}+8x\_{2}-5\geq 10;\\-2x\_{1}+10x\_{2}-7\leq 0;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$ | 1. $F\left(x\right)=x\_{1}+x\_{2}-4⇒max$

$$\left\{\begin{array}{c}2x\_{1}+4x\_{2}+4\leq 20;\\-4x\_{1}+2x\_{2}\leq 8;\\x\_{1}+3x\_{2}-3\leq 6;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |

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| 1. $F\left(x\right)=x\_{1}+2x\_{2}+1⇒max$

$$\left\{\begin{array}{c}x\_{1}+x\_{2}\leq 6;\\-3x\_{1}+10x\_{2}-7\leq 19;\\2x\_{1}+5x\_{2}-10\leq 10;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $ F\left(x\right)=x\_{1}+2x\_{2}+4⇒max$

$$\left\{\begin{array}{c}2x\_{1}+x\_{2}-6\leq 0;\\x\_{1}-x\_{2}\geq -1;\\2x\_{1}+2x\_{2}-1\geq 0;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $F\left(x\right)=-2x\_{1}+3x\_{2}+5⇒max$

$$\left\{\begin{array}{c}2x\_{1}+4x\_{2}-8\leq 0;\\-4x\_{1}+x\_{2}+4\geq 0;\\2x\_{1}+4x\_{2}\geq 1;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $F\left(x\right)=x\_{1}+4x\_{2}+3⇒max$

$$\left\{\begin{array}{c}2x\_{1}+3x\_{2}-3\geq 0;\\-x\_{1}+2x\_{2}\geq -4;\\x\_{1}+2x\_{2}-16\leq 0;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $F\left(x\right)=x\_{1}+4x\_{2}+3⇒max$

$$\left\{\begin{array}{c}2x\_{1}+3x\_{2}-3\geq 0;\\-x\_{1}+2x\_{2}\geq -4;\\x\_{1}+2x\_{2}-16\leq 0;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $ F\left(x\right)=5x\_{1}-x\_{2}-6⇒min$

$$\left\{\begin{array}{c}x\_{1}-2x\_{2}+2\geq 0;\\2x\_{1}+3x\_{2}\leq 4;\\2x\_{1}+x\_{2}+1\leq 3;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $ F\left(x\right)=x\_{1}+2x\_{2}+1⇒min$

$$\left\{\begin{array}{c}x\_{1}+x\_{2}\leq 6;\\-3x\_{1}+10x\_{2}-7\leq 19;\\2x\_{1}+5x\_{2}-10\leq 10;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $F\left(x\right)=3x\_{1}+x\_{2}⇒max$

$$\left\{\begin{array}{c}x\_{1}+x\_{2}\leq 6;\\-x\_{1}+10x\_{2}\leq 10;\\2x\_{1}+5x\_{2}\leq 15;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |
| 1. $F\left(x\right)=x\_{1}+2x\_{2}⇒max$

$$\left\{\begin{array}{c}x\_{1}+x\_{2}\leq 5;\\-x\_{1}+5x\_{2}\leq 10;\\2x\_{1}+4x\_{2}\leq 12;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ | 1. $F\left(x\right)=-3x\_{1}-2x\_{2}⇒min$

$$\left\{\begin{array}{c}x\_{1}+x\_{2}\leq 7;\\-x\_{1}+2x\_{2}+2\geq 1;\\2x\_{1}+x\_{2}\geq 2;\\x\_{1}\geq 0;\\x\_{2}\geq 0.\end{array}\right.$$ |