```
> restart;
> x1:=c1^alpha*c2^(1-alpha);
```

$$x1 := c1^{\alpha}\, c2^{1-\alpha} \tag{1}$$

```
> x2:=y-p1*c1-p2*c2;
```

$$x2 := y - p1\, c1 - p2\, c2 \tag{2}$$

```
> x3:=extrema(x1,{x2},{c1,c2},'x4');
```

$$x3 := \left\{ -\frac{\left(\frac{y\,\alpha}{p1}\right)^{\alpha} (-1+\alpha)\, y \left(-\frac{(-1+\alpha)\, y}{p2}\right)^{-\alpha}}{p2} \right\} \tag{3}$$

```
> x4;
```

$$\left\{ \left\{ c1 = \frac{y\,\alpha}{p1},\ c2 = -\frac{(-1+\alpha)\, y}{p2} \right\} \right\} \tag{4}$$

```
> x5:=x1+lambda*x2;
```

$$x5 := c1^{\alpha}\, c2^{1-\alpha} + \lambda\, (y - p1\, c1 - p2\, c2) \tag{5}$$

```
> x6:={diff(x5,c1),diff(x5,c2),diff(x5,lambda)};
```

$$x6 := \left\{ \frac{c1^{\alpha}\, \alpha\, c2^{1-\alpha}}{c1} - \lambda\, p1,\ \frac{c1^{\alpha}\, c2^{1-\alpha}\, (1-\alpha)}{c2} - \lambda\, p2,\ y - p1\, c1 - p2\, c2 \right\} \tag{6}$$

```
> x7:=solve(x6,{c1,c2,lambda});
```

$$x7 := \left\{ c1 = \frac{y\,\alpha}{p1},\ c2 = -\frac{(-1+\alpha)\, y}{p2},\ \lambda = -\frac{(-1+\alpha)\, e^{-\alpha \ln\left(-\frac{p1\,(-1+\alpha)}{\alpha\, p2}\right)}}{p2} \right\} \tag{7}$$