```
Solve[{Subscript[Q, 1] == 15 / 2 - (5 / 12) Subscript[Q, 2],
Subscript[Q, 2] == 15 / 2 - (5 / 12) Subscript[Q, 1]
}, {Subscript[Q, 1], Subscript[Q, 2], Subscript[Q, 3], Subscript[Q, 4]}]
```

Out[•]= $\left\{\left\{Q_1 \to \frac{90}{17}, Q_2 \to \frac{90}{17}\right\}\right\}$

```
Solve[
 {Subscript[Q, 1] == 15 / 2 - (5 / 12) Subscript[Q, 2] - (5 / 12) Subscript[Q, 3],
Subscript[Q, 2] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 3],
Subscript[Q, 3] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2]
}, {Subscript[Q, 1], Subscript[Q, 2],
  Subscript[Q, 3], Subscript[Q, 4], Subscript[Q, 5]}]
```

Out[•]= $\left\{\left\{Q_1 \to \frac{45}{11}, Q_2 \to \frac{45}{11}, Q_3 \to \frac{45}{11}\right\}\right\}$

```
Solve[{Subscript[Q, 1] == 15 / 2 - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4],
  Subscript[Q, 2] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 3] -
     (5 / 12) Subscript[Q, 4], Subscript[Q, 3] == 15 / 2 -
     (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] - (5 / 12) Subscript[Q, 4],
  Subscript[Q, 4] == 15 / 2 - (5 / 12) Subscript[Q, 1] -
     (5 / 12) Subscript[Q, 2] - (5 / 12) Subscript[Q, 3]},
 {Subscript[Q, 1], Subscript[Q, 2], Subscript[Q, 3], Subscript[Q, 4]}]
```

Out[•]= $\left\{\left\{Q_1 \to \frac{10}{3}, Q_2 \to \frac{10}{3}, Q_3 \to \frac{10}{3}, Q_4 \to \frac{10}{3}\right\}\right\}$

```
Solve[{Subscript[Q, 1] == 15 / 2 - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5],
  Subscript[Q, 2] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 3] -
     (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5],
  Subscript[Q, 3] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5],
  Subscript[Q, 4] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 5],
Subscript[Q, 5] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4]
}, {Subscript[Q, 1], Subscript[Q, 2], Subscript[Q, 3],
  Subscript[Q, 4], Subscript[Q, 5]}]
```

Out[•]= $\left\{\left\{Q_1 \to \frac{45}{16}, Q_2 \to \frac{45}{16}, Q_3 \to \frac{45}{16}, Q_4 \to \frac{45}{16}, Q_5 \to \frac{45}{16}\right\}\right\}$

```
Solve[{Subscript[Q, 1] == 15 / 2 - (5 / 12) Subscript[Q, 2] - (5 / 12) Subscript[Q, 3] -
     (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5] - (5 / 12) Subscript[Q, 6],
Subscript[Q, 2] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 3] -
     (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5] - (5 / 12) Subscript[Q, 6],
Subscript[Q, 3] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5] - (5 / 12) Subscript[Q, 6],
Subscript[Q, 4] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 5] - (5 / 12) Subscript[Q, 6],
Subscript[Q, 5] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 6],
Subscript[Q, 6] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5]
}, {Subscript[Q, 1], Subscript[Q, 2], Subscript[Q, 3],
  Subscript[Q, 4], Subscript[Q, 5], Subscript[Q, 6]}]
```

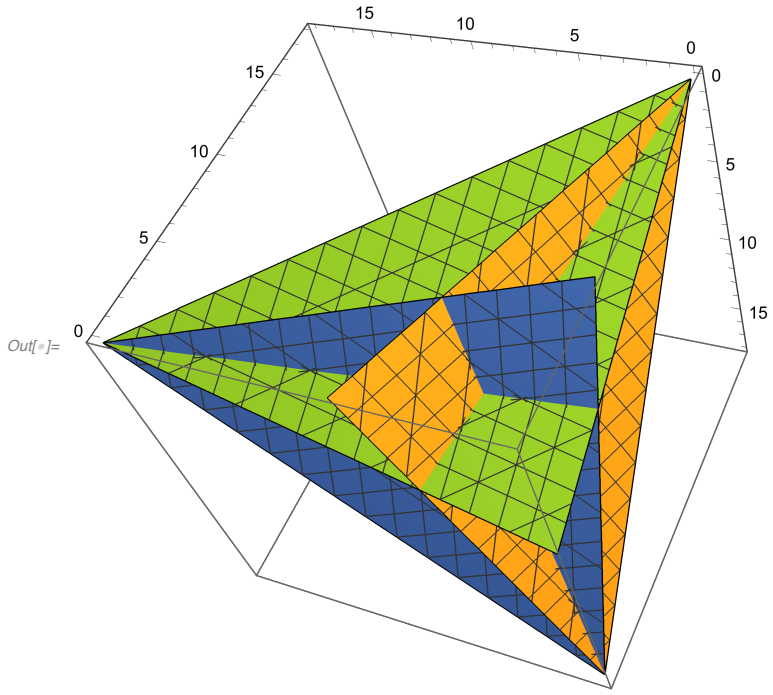
Out[•]= $\left\{\left\{Q_1 \to \frac{90}{37}, Q_2 \to \frac{90}{37}, Q_3 \to \frac{90}{37}, Q_4 \to \frac{90}{37}, Q_5 \to \frac{90}{37}, Q_6 \to \frac{90}{37}\right\}\right\}$

```
Solve[{
Subscript[Q, 1] == 15 / 2 - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5] -
     (5 / 12) Subscript[Q, 6] - (5 / 12) Subscript[Q, 7],
Subscript[Q, 2] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 3] -
     (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5] -
     (5 / 12) Subscript[Q, 6] - (5 / 12) Subscript[Q, 7],
Subscript[Q, 3] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 4] - (5 / 12) Subscript[Q, 5] -
     (5 / 12) Subscript[Q, 6] - (5 / 12) Subscript[Q, 7],
Subscript[Q, 4] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 5] -
     (5 / 12) Subscript[Q, 6] - (5 / 12) Subscript[Q, 7],
Subscript[Q, 5] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4] -
     (5 / 12) Subscript[Q, 6] - (5 / 12) Subscript[Q, 7],
Subscript[Q, 6] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4] -
     (5 / 12) Subscript[Q, 5] - (5 / 12) Subscript[Q, 7],
Subscript[Q, 6] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2] -
     (5 / 12) Subscript[Q, 3] - (5 / 12) Subscript[Q, 4] -
     (5 / 12) Subscript[Q, 5] - (5 / 12) Subscript[Q, 6]
}, {Subscript[Q, 1], Subscript[Q, 2], Subscript[Q, 3], Subscript[Q, 4],
  Subscript[Q, 5], Subscript[Q, 6], Subscript[Q, 7]}]
```

Out[•]= $\left\{\left\{Q_1 \to \frac{15}{7}, Q_2 \to \frac{15}{7}, Q_3 \to \frac{15}{7}, Q_4 \to \frac{15}{7}, Q_5 \to \frac{15}{7}, Q_6 \to \frac{15}{7}, Q_7 \to \frac{15}{7}\right\}\right\}$

```
ContourPlot3D[
 {Subscript[Q, 1] == 15 / 2 - (5 / 12) Subscript[Q, 2] - (5 / 12) Subscript[Q, 3],
  Subscript[Q, 2] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 3],
  Subscript[Q, 3] == 15 / 2 - (5 / 12) Subscript[Q, 1] - (5 / 12) Subscript[Q, 2]},
 {Subscript[Q, 1], 18, 0}, {Subscript[Q, 2], 18, 0}, {Subscript[Q, 3], 18, 0}
]
```

Out[•]=



Out[•]=