In[3]:=
```
BaseForm[21, 16]
```

Out[3]//BaseForm=
15_{16}

In[7]:=
```
N[1 / (8 + 2 / 6) * 60]
```

Out[7]=
```
7.2
```

```
d
```

```
Solve[x == a xx + b yy + c, y == d xx + e yy + f]
```

In[15]:=
```
reseni = FullSimplify[Solve[{x1 == a xx1 + b yy1 + c, y1 == d xx1 + e yy1 + f, x2 == a xx2 + b yy2 + c,
    y2 == d xx2 + e yy2 + f, x3 == a xx3 + b yy3 + c, y3 == d xx3 + e yy3 + f}, {a, b, c, d, e, f}]]
```

Out[15]=
```
{{a → (x2 yy1 - x3 yy1 - x1 yy2 + x3 yy2 + x1 yy3 - x2 yy3) /
    (xx2 yy1 - xx3 yy1 - xx1 yy2 + xx3 yy2 + xx1 yy3 - xx2 yy3),
  c → (x3 xx2 yy1 - x2 xx3 yy1 - x3 xx1 yy2 + x1 xx3 yy2 + x2 xx1 yy3 - x1 xx2 yy3) /
    (xx2 yy1 - xx3 yy1 - xx1 yy2 + xx3 yy2 + xx1 yy3 - xx2 yy3),
  b → (x3 (-xx1 + xx2) + x2 (xx1 - xx3) + x1 (-xx2 + xx3)) /
    (xx3 (yy1 - yy2) + xx1 (yy2 - yy3) + xx2 (-yy1 + yy3)),
  d → (y2 yy1 - y3 yy1 - y1 yy2 + y3 yy2 + y1 yy3 - y2 yy3) /
    (xx2 yy1 - xx3 yy1 - xx1 yy2 + xx3 yy2 + xx1 yy3 - xx2 yy3),
  e → (xx2 y1 - xx3 y1 - xx1 y2 + xx3 y2 + xx1 y3 - xx2 y3) /
    (xx2 yy1 - xx3 yy1 - xx1 yy2 + xx3 yy2 + xx1 yy3 - xx2 yy3),
  f → (xx3 y2 yy1 - xx2 y3 yy1 - xx3 y1 yy2 + xx1 y3 yy2 + xx2 y1 yy3 - xx1 y2 yy3) /
    (xx3 (yy1 - yy2) + xx1 (yy2 - yy3) + xx2 (-yy1 + yy3))}}
```

In[24]:=
```
reseni1 = FullSimplify[Solve[{x1 == a xx1 + b yy1 + c, y1 == d xx1 + e yy1 + f,
    x2 == a xx2 + b yy2 + c, y2 == d xx2 + e yy2 + f, x3 == a xx3 + b yy3 + c, y3 == d xx3 + e yy3 + f,
    (x1 - x2) * (x3 - x2) + (y1 - y2) * (y3 - y2) == 0, (x2 - x3) * (x4 - x3) + (y2 - y3) * (y4 - y3) == 0,
    (x1 - x4) * (x3 - x4) + (y1 - y4) * (y3 - y4) == 0}, {a, b, c, d, e, f}]]
```

Out[24]=
```
$Aborted
```

In[20]:=
```
FullSimplify[(a xx4 + b yy4 + c) /. reseni /.
  {x1 → -1, y1 → -1, x2 → -1, y2 → 1, x3 → 1, y3 → -1, x4 → 1, y4 → 1}]
```

Out[20]=
```
{(-(xx3 - 2 xx4) (yy1 - yy2) - xx2 (yy1 + yy3 - 2 yy4) + xx1 (yy2 + yy3 - 2 yy4)) /
  (xx3 (yy1 - yy2) + xx1 (yy2 - yy3) + xx2 (-yy1 + yy3))}
```

In[64]:=
```
xx1 = 2; yy1 = 3; xx2 = -2; yy2 = 3; xx3 = 26; yy3 = 4; xx4 = 7; yy4 = -3;
```

In[65]:=
```
Δx1 = xx2 - xx3; Δx2 = xx4 - xx3; Δx3 = xx1 - xx2 + xx3 - xx4;
Δy1 = yy2 - yy3; Δy2 = yy4 - yy3; Δy3 = yy1 - yy2 + yy3 - yy4;
```

In[117]:=
```
a6 = (Δx2 Δy3 - Δx2 Δy3) / (Δx1 Δy2 - Δy1 Δx2);
a7 = (Δx1 Δy3 - Δy1 Δx3) / (Δx1 Δy2 - Δy1 Δx2);
a0 = xx2 - xx1 + a6 xx2;
a1 = xx4 - xx1 + a7 xx4;
a2 = xx1;
a3 = yy2 - yy1 + a6 yy2;
a4 = yy4 - yy1 + a7 yy4;
a5 = yy1;
```

In[125]:=
```
vec = Transpose[{{a0, a3, a6}, {a1, a4, a7}, {a2, a5, 1}}].{1, 1, 1}
vec = vec / vec[[3]]
```

Out[125]=
$$\left\{-\frac{680}{177}, -\frac{4}{59}, \frac{4}{177}\right\}$$

Out[126]=
```
{-170, -3, 1}
```

In[167]:=
```
vec = Inverse[Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}]].{7, -3, 1} /.
   reseni1 /. {xxx1 → xx1, xxx2 → xx2, xxx3 → xx3, xxx4 → xx4,
   yyy1 → yy1, yyy2 → yy2, yyy3 → yy3, yyy4 → yy4}
vec =
 vec /
  vec[[3]]
```

Out[167]= $\left\{-\frac{177}{4}, -\frac{177}{4}, -\frac{177}{4}\right\}$

Out[168]= {1, 1, 1}

In[149]:=
```
Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}].{0, 0, 1} - {xxx1, yyy1, 1}
Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}].{1, 0, 1} /
  (Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}].{1, 0, 1})[[3]] - {xxx2,
  yyy2, 1}
Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}].{0, 1, 1} /
  (Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}].{0, 1, 1})[[3]] - {xxx3,
  yyy3, 1}
Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}].{1, 1, 1} /
  (Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}].{1, 1, 1})[[3]] - {xxx4,
  yyy4, 1}
```

Out[149]= {aa2 - xxx1, aa5 - yyy1, 0}

Out[150]= $\left\{\frac{aa0 + aa2}{1 + aa6} - xxx2, \frac{aa3 + aa5}{1 + aa6} - yyy2, 0\right\}$

Out[151]= $\left\{\frac{aa1 + aa2}{1 + aa7} - xxx3, \frac{aa4 + aa5}{1 + aa7} - yyy3, 0\right\}$

Out[152]= $\left\{\frac{aa0 + aa1 + aa2}{1 + aa6 + aa7} - xxx4, \frac{aa3 + aa4 + aa5}{1 + aa6 + aa7} - yyy4, 0\right\}$

In[158]:=
```
reseni1 =
 FullSimplify[Solve[{aa2 - xxx1 == 0, aa5 - yyy1 == 0, (aa0 + aa2)/(1 + aa6) - xxx2 == 0, (aa3 + aa5)/(1 + aa6) - yyy2 == 0,
    (aa1 + aa2)/(1 + aa7) - xxx3 == 0, (aa4 + aa5)/(1 + aa7) - yyy3 == 0, (aa0 + aa1 + aa2)/(1 + aa6 + aa7) - xxx4 == 0,
    (aa3 + aa4 + aa5)/(1 + aa6 + aa7) - yyy4 == 0}, {aa2, aa3, aa4, aa5, aa6, aa0, aa1, aa7}][[1]]]
```

Out[158]=
$$\left\{aa1 \to \frac{(xxx4\,(xxx3\,(-yyy1 + yyy2) + xxx1\,(-yyy2 + yyy3)) + xxx2\,(xxx3\,(yyy1 - yyy4) + xxx1\,(-yyy3 + yyy4)))}{(xxx4\,(yyy2 - yyy3) + xxx2\,(yyy3 - yyy4) + xxx3\,(-yyy2 + yyy4))},\right.$$
$$aa3 \to \frac{(xxx4\,(yyy1 - yyy2)\,yyy3 + xxx1\,yyy2\,(yyy3 - yyy4) + xxx3\,(-yyy1 + yyy2)\,yyy4 + xxx2\,yyy1\,(-yyy3 + yyy4))}{(xxx4\,(yyy2 - yyy3) + xxx2\,(yyy3 - yyy4) + xxx3\,(-yyy2 + yyy4))},$$
$$aa4 \to \frac{(xxx4\,yyy2\,(-yyy1 + yyy3) + xxx3\,yyy1\,(yyy2 - yyy4) + xxx2\,(yyy1 - yyy3)\,yyy4 + xxx1\,yyy3\,(-yyy2 + yyy4))}{(xxx4\,(yyy2 - yyy3) + xxx2\,(yyy3 - yyy4) + xxx3\,(-yyy2 + yyy4))},$$
$$aa0 \to \frac{(xxx1\,(xxx4\,(-yyy2 + yyy3) + xxx3\,(yyy2 - yyy4)) + xxx2\,(xxx4\,(yyy1 - yyy3) + xxx3\,(-yyy1 + yyy4)))}{(xxx4\,(yyy2 - yyy3) + xxx2\,(yyy3 - yyy4) + xxx3\,(-yyy2 + yyy4))},$$
$$aa6 \to \frac{-(xxx3 - xxx4)\,(yyy1 - yyy2) + (xxx1 - xxx2)\,(yyy3 - yyy4)}{xxx4\,(yyy2 - yyy3) + xxx2\,(yyy3 - yyy4) + xxx3\,(-yyy2 + yyy4)},$$
$$aa7 \to \frac{(xxx2 - xxx4)\,(yyy1 - yyy3) - (xxx1 - xxx3)\,(yyy2 - yyy4)}{xxx4\,(yyy2 - yyy3) + xxx2\,(yyy3 - yyy4) + xxx3\,(-yyy2 + yyy4)},$$
$$\left.aa2 \to xxx1,\ aa5 \to yyy1\right\}$$

In[179]:=
```
For[i = 1, i ≤ 3, i++,
 For[j = 1, j ≤ 3, j++, Print[CForm[FullSimplify[Inverse[
        Transpose[{{aa0, aa3, aa6}, {aa1, aa4, aa7}, {aa2, aa5, 1}}]]][[i]][[j]]], ";"]
 ]
]
```

```
(aa4 - aa5 * aa7) /
  (-(aa1 * aa3) + aa0 * aa4 - aa2 * aa4 * aa6 + aa1 * aa5 * aa6 + aa2 * aa3 * aa7 - aa0 * aa5 * aa7);

(aa1 - aa2 * aa7) /
  (aa1 * aa3 - aa0 * aa4 + aa2 * aa4 * aa6 - aa1 * aa5 * aa6 - aa2 * aa3 * aa7 + aa0 * aa5 * aa7);

(aa2 * aa4 - aa1 * aa5) /
  (aa1 * aa3 - aa0 * aa4 + aa2 * aa4 * aa6 - aa1 * aa5 * aa6 - aa2 * aa3 * aa7 + aa0 * aa5 * aa7);

(aa3 - aa5 * aa6) /
  (aa1 * aa3 - aa0 * aa4 + aa2 * aa4 * aa6 - aa1 * aa5 * aa6 - aa2 * aa3 * aa7 + aa0 * aa5 * aa7);

(aa0 - aa2 * aa6) /
  (-(aa1 * aa3) + aa0 * aa4 - aa2 * aa4 * aa6 + aa1 * aa5 * aa6 + aa2 * aa3 * aa7 - aa0 * aa5 * aa7);

(aa2 * aa3 - aa0 * aa5) /
  (-(aa1 * aa3) + aa0 * aa4 - aa2 * aa4 * aa6 + aa1 * aa5 * aa6 + aa2 * aa3 * aa7 - aa0 * aa5 * aa7);

(aa4 * aa6 - aa3 * aa7) /
  (aa1 * aa3 - aa0 * aa4 + aa2 * aa4 * aa6 - aa1 * aa5 * aa6 - aa2 * aa3 * aa7 + aa0 * aa5 * aa7);

(aa1 * aa6 - aa0 * aa7) /
  (-(aa1 * aa3) + aa0 * aa4 - aa2 * aa4 * aa6 + aa1 * aa5 * aa6 + aa2 * aa3 * aa7 - aa0 * aa5 * aa7);

(aa1 * aa3 - aa0 * aa4) /
  (aa1 * aa3 - aa0 * aa4 + aa2 * aa4 * aa6 - aa1 * aa5 * aa6 - aa2 * aa3 * aa7 + aa0 * aa5 * aa7);
```