In[1]:=
```
variant = 13;

n = j = Floor[variant / 10];
m = variant - 10 * n;
k = n + m;
i = Abs[n - m];


f1 = 0.3 n * x1 - 0.2 m * x2 + 1.1 k * x3 - 0.4 i * x4 + 1.5 (30 + j) x5 == 15;
f2 = 0.23 (40 + n) x1 + 0.3 m * x2 - 2.1 k * x3 + 0.3 i * x4 - 0.5 j * x5 == 16;
f3 = 1.1 n * x1 - 0.2 m * x2 + 1.2 k * x3 - 0.4 (50 + i) x4 + 0.4 j * x5 == 14;
f4 = 2.5 n * x1 + 0.1 m * x2 + 0.2 (40 + k) x3 - 0.1 i * x4 - 0.2 j * x5 == 12;
f5 = 0.1 n * x1 + 0.8 (50 + m) x2 + 0.6 k * x3 - 0.2 i * x4 + 0.7 j * x5 == 18;

Solve[{f1, f2, f3, f4, f5}, {x1, x2, x3, x4, x5}]
NSolve[{f1, f2, f3, f4, f5}, {x1, x2, x3, x4, x5}]
```

Out[11]=
```
{{x1 → 2.31387, x2 → 0.372295, x3 → 0.69002, x4 → -0.397591, x5 → 0.240324}}
```

Out[12]=
```
{{x1 → 2.31387, x2 → 0.372295, x3 → 0.69002, x4 → -0.397591, x5 → 0.240324}}
```

In[15]:=
```
A = {{0.3 n, -0.2 m, 1.1 k, -0.4 i, 1.5 (30 + j)},
   {0.23 (40 + n), 0.3 m, -2.1 k, 0.3 i, -0.5 j}, {1.1 n, -0.2 m, 1.2 k, -0.4 (50 + i), 0.4 j},
   {2.5 n, 0.1 m, 0.2 (40 + k), -0.1 i, -0.2 j}, {0.1 n, 0.8 (50 + m), 0.6 k, -0.2 i, 0.7 j}};
b = {15, 16, 14, 12, 18};
LinearSolve[A, b]
```

Out[17]=
```
{2.31387, 0.372295, 0.69002, -0.397591, 0.240324}
```

In[18]:=
```
AI = Inverse[A];
x = AI.b
```

Out[19]=
```
{2.31387, 0.372295, 0.69002, -0.397591, 0.240324}
```

In[20]:=
```
r = b - A.x; ep = AI.r
```

Out[20]=
$$\left\{6.01236 \times 10^{-16},\ -4.77824 \times 10^{-18},\ 2.88892 \times 10^{-17},\ -1.3164 \times 10^{-16},\ 2.92622 \times 10^{-17}\right\}$$

In[21]:=
```
{LU, P, cond} = LUDecomposition[A];
Upper[LU_?MatrixQ] := LU * Table[If[i ≤ j, 1, 0], {i, Length[LU]}, {j, Length[LU]}];
Lower[LU_?MatrixQ] := LU - Upper[LU] + IdentityMatrix[Length[LU]];
L = MatrixForm[Lower[LU]];
U = MatrixForm[Upper[LU]];
LUBackSubstitution[{LU, P, cond}, b]
```

Out[26]=
```
{2.31387, 0.372295, 0.69002, -0.397591, 0.240324}
```

In[27]:=
```
Z = Array[z, 5];
eq = A.Z == b
r = Solve[eq, Z]
Z = Z /. r[[1]]
```

Out[28]=
```
{0.3 z[1] - 0.6 z[2] + 4.4 z[3] - 0.8 z[4] + 46.5 z[5],
  9.43 z[1] + 0.9 z[2] - 8.4 z[3] + 0.6 z[4] - 0.5 z[5],
  1.1 z[1] - 0.6 z[2] + 4.8 z[3] - 20.8 z[4] + 0.4 z[5],
  2.5 z[1] + 0.3 z[2] + 8.8 z[3] - 0.2 z[4] - 0.2 z[5],
  0.1 z[1] + 42.4 z[2] + 2.4 z[3] - 0.4 z[4] + 0.7 z[5]} == {15, 16, 14, 12, 18}
```

Out[29]=
```
{{z[1] → 2.31387, z[2] → 0.372295, z[3] → 0.69002, z[4] → -0.397591, z[5] → 0.240324}}
```

Out[30]=
```
{2.31387, 0.372295, 0.69002, -0.397591, 0.240324}
```