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Metoda Kaczmarza

Projekt 4

Kod programu

```
In[ ]:= Clear[kacz];
kacz[a_, b_, x0_, ε_] := Module[{k = 0, x = x0, n = Length[b]},
  While[Norm[a.x - b] ≥ ε, x = x + (b[[Mod[k, n] + 1]] - a[[Mod[k, n] + 1]].x)/Norm[a[[Mod[k, n] + 1]]]^2 a[[Mod[k, n] + 1]];
   k++];
  Return[{N[x], k}]
 ]
```

Testowanie

```
In[ ]:= a = {{3., 1, 3, -5, 0, -1}, {1, -2, 2, 2, 3, 3}, {-1, 3, 3, 2, -1, 2},
    {-2, 2, 2, -5, 4, 0}, {4, -4, 4, -2, -4, 1}, {4, -2, -3, -5, 5, 2}};
b = {2, 0, -3, 2, 4, 0};
x0 = {-5, -5, 2, 2, 4, 4};
e = 0.001;
kacz[a, b, x0, e]
Out[ ]=
{{-0.345242, -0.902561, 0.474331, -0.379475, 0.0671265, -0.617084}, 534}
```