```
GaussElim[Matrix_] := Module[{M = Matrix, i, j, k, r},
  If[M[[1 ;;, 1]] ≠  ConstantArray[0, Length[M]],
   Do[
    Do[
     If[i == j,
      If[M[[i, j]] == 0,
       Do[ If[r > i,
           If[M[[r, j]] ≠ 0,
             tempM = M[[i]];
             M[[i]] = M[[r]];
             M[[r]] = tempM;
             Break[]
            ];
          ],
          {r, Length[M]}
         ];
       ];
       Do[If[i ≠ k,
          If[M[[i, j]] ≠ 0,
           M[[k]] = M[[i, j]] M[[k]] - M[[k, j]] M[[i]];
          ]
          (*Print[M[[k]]];*)
         ],
         {k, Length[M]}
       ];
      ],
      {j, Length[M]}
    ],
    {i, Length[M]}
   ]
  ];
  M
 ]
```

```
GaussElim[{{3, 2, -4, 5}, {5, -3, 1, 11}, {5, -3, 1, 11}, {5, -3, 1, 11}}]
```

```
{{-57, 0, 30, -111}, {0, -19, 23, 8}, {0, 0, 0, 0}, {0, 0, 0, 0}}
```