

22 Using m-file to find a basis for null-space of AB

Use Pico to create a new file called **nulbasis.m** in your home directory:
to do this ,

type	pico nulbasis.m
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When file is opened enter the following code in the file(copy and paste) .

===== Beginning of the code =====
function N = nulbasis(A)

```
% nulbasis Basis for nullspace.
% % N = nulbasis(A) returns a basis for the nullspace of A
% in the columns of N. The basis contains the n-r special
% solutions to Ax=0. freecol is the list of free columns.
%
% Example:
%
% >> A = [1 2 0 3;
%         [0 0 1 4];
%
% >> N = nulbasis(A)
%
% N = [-2 -3]
%      [ 1  0]
%      [ 0 -4]
%      [ 0  1]
%
% See also fourbase.
```

```
[R,pivcol] = rref(A,sqrt(eps));
[m,n] = size(A);
r = length(pivcol);
freecol = 1:n;
freecol(pivcol) = [];
N = zeros(n, n-r);
N(freecol, :) = eye(n-r);
N(pivcol, :) = -R(1:r, freecol);
```

===== End of the code =====