

```
function transformation(A)
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
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%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% This function determines if a linear transformation is
% onto and/or one-to-one
% Input argument: mxn matrix called A
%

m=length(A(:,1)); % number of rows in A
n=length(A(1,:)); % number of columns in A

if rank(A) == m && rank(A) == n
    disp('The transformation is onto and one-to-one.')
    %if number of rows and columns match the number of pivot positions, A
    %is onto and one-to-one
elseif rank(A) == m
    disp('The transformation is onto but not one-to-one')
    %if just the number of rows match the number of pivot positions, A is
    %only onto not one-to-one
elseif rank(A) == n
    disp('The transformation is one-to-one but not onto')
    %if just the number of columns match the number of pivot positions, A
    %is only one-to-one not onto
else
    disp('The transformation is neither onto nor one-to-one')
    %if the number of pivot positions does not match the number of rows or
    %columns, A is both not onto and not one-to-one

% Use dependence.m as a guide to write this new function.

end
```