```
% ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
function  kepler_E(e,M)
% ~~~~~~~~~~~~~~~~~~~~~~~~~~
 e=0.7079772;
 M=144.225*pi/180;
%...Set an error tolerance:
error = 1.e-8;
%...Select a starting value for E:
if M < pi
E = M + e/2;
else
E = M - e/2;
end
%...Iterate on Equation 3.17 until E is determined to within
%...the error tolerance:
ratio = 1;
counter=1;
while abs(ratio) > error
    fprintf(' iteration = %d\n',counter)
    ratio = (E - e*sin(E) - M)/(1 - e*cos(E))
E = E - ratio;
counter=counter+1;
end

%kepler_E
fprintf('\n\n-----------------------------------------------------------\n\n')
fprintf('\n Converged eccentric anomaly = %s  \n', E)
fprintf('\n-----------------------------------------------------------\n\n')
```

```
 iteration = 1

ratio =

    0.0980

 iteration = 2

ratio =

   6.1100e-04

 iteration = 3

ratio =

   2.8679e-08

 iteration = 4

ratio =

  -2.6747e-16
```

```
-------------------------------------------------------

 Converged eccentric anomaly = 2.772571e+00

-------------------------------------------------------
```

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