chapter3_4 Transistor Circuits for analyzing JFET Q-point conditions.

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% Onwubolu, G. C.
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%
% Chapter 3.6: Transistor Circuits
%
% Example Example 3.4   MATLAB's calculating power is demonstrated by
analyzing
% JFET Q-point conditions.

'Example 3.4'            % Display label.
% JFET Q-point conditions
Vdd=24;
Vds=12;
Vp=4;
Idss=8E-3;
Id=5E-3;
Rd=1E+6;

% Commence computation
D=Idss/Id;
C=D-1;
B=2*D/Vp;
A=D/Vp^2;
%Solve quadratic equation
Vs=[A B C];        % Of the form A*Vs^2+B*Vs+C=0
V=roots(Vs)         % Find the roots
if V(1)>-Vp         % Check constraints
   Rs=abs(V(1))/Id
else Rs=abs(V(2))/Id
end
pause
```