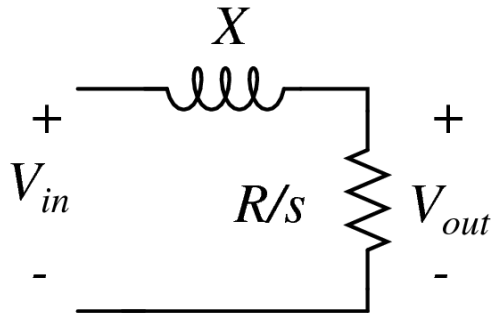


Suppose that I have the following circuit. In this case, we're looking at part of the induction machine circuit. Let's assume that I want to plot the square of the current.



Here's the script to use:

```
% Parameter definitions
R = 2;           % Resistance
X = 3;           % Inductor reactance
omega = 2*pi*60; % Stator electrical frequency
Vin = 100;

s = linspace(1,1e-6,10000); % Creates a vector of 10000 points between 1 and
1e-6 (i.e. from slip = 1 to slip almost = 0)

% Now, we define the transfer function Vout/Vin. Here's how we do it:
I = Vin./(j*X + R./s);

% Notice that when we perform an operation on two vectors, we have to use
% the dot notation. So something like so:
%
% Each entry in 1./s is the inverse of the corresponding entry in s.
% Each entry in s.^2 is the square of the corresponding entry in s.
% Each entry in a.*b is the product of each of the corresponding entries in
% a and b.
%
% j is the imaginary number

omega_m = (1-s)*omega*(60/(2*pi)); % Speed in RPM.

% Now, I'll plot the squared magnitude of the current as a function of
% frequency in RPM.

figure(1);
plot(omega_m,abs(I).^2);
xlabel('omega: RPM');
ylabel('|I|^2');
```

