```
//To determine operating frequency for air filled rectangular
waveguide
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//EXP-8
clc;clear;


// Define function for operating frequency
function w=op_f(a, b, m, n)
    w = 3e8 * %pi * sqrt(m^2 / a^2 + n^2 / b^2);
endfunction

// Loop for 5 inputs
for i = 1:5
    disp("Enter a, b, m, n:");
    par = mscanf("%f %f %f %f");

    // Extract values
    a = par(1);
    b = par(2);
    m = par(3);
    n = par(4);

    // Calculate frequency in GHz
    freq = op_f(a, b, m, n) * 1e-9;
    // Print formatted result
    mprintf("Operating Frequency for TE%d%d mode is %6.2f GHz\n",
m, n, freq);
end
```

Output

```
  "Enter a b m n"
--> 0.01 0.02 1 0
Operating Frequency for TE10 mode is  94.25GHz
  "Enter a b m n"
--> 0.01 0.02 0 1
Operating Frequency for TE01 mode is  47.12GHz
  "Enter a b m n"
--> 0.01 0.02 0 2
Operating Frequency for TE02 mode is  94.25GHz
  "Enter a b m n"
--> 0.01 0.02 1 1
Operating Frequency for TE11 mode is 105.37GHz
  "Enter a b m n"
--> 0.01 0.02 0 3
Operating Frequency for TE03 mode is 141.37GHz
-->
:
```