```matlab
y = @(x) (x^3)-(23*x^2)+(142*x)-120; guess1 = input("Enter first guess: " ); guess2 =
input("Enter second guess: " ); max_iterations = input("Enter max iterations: " ); tolerance =
input("Enter tolerance: " ); iterations = 0; errors = []; prevGuess = 0; while iterations <
max_iterations iterations = iterations + 1; newGuess = (guess1 + guess2) / 2; if y(newGuess) ==
0 root = newGuess; break; elseif y(newGuess) * y(guess1) < 0 guess2 = newGuess; else
guess1 = newGuess; endif if iterations > 1 relative_error = abs(newGuess - prevGuess) /
newGuess; errors = [errors, relative_error]; if relative_error < tolerance root = newGuess; break;
endif endif prevGuess=newGuess; endwhile fprintf("No of iterations: %d \n",iterations);
fprintf("Root: %d \n",root); plot([1:1:length(errors)],errors);
```