

ME 1020 Engineering Programming with MATLAB

Problem 5.11:

11. You can use trigonometric identities to simplify the equations that appear in many applications. Confirm the identity $\tan(2x) = 2 \tan x / (1 - \tan^2 x)$ by plotting both the left and the right sides versus x over the range $0 \leq x \leq 2\pi$.

```
% Problem 5.11
clear
clc
disp('Problem 5.11: Scott Thomas')

x = 0:0.01:2*pi;
y1 = tan(2*x);
y2 = 2*tan(x)./(1 - tan(x).^2);

subplot(2,1,1)
plot(x,y1), ylabel('2*tan(x)'),grid on
title('Problem 5.11: Scott Thomas')
subplot(2,1,2)
plot(x,y2), xlabel('x (Radians)'), ylabel('2*tan(x)./(1 - tan(x).^2)'),grid on
```

Problem 5.11: Scott Thomas

