

ME 1020 Engineering Programming with MATLAB

Problem 5.13:

13. Use a plot over the range $0 \leq x \leq 5$ to confirm that $\sin(ix) = i \sinh x$.

```
% Problem 5.13
clear
clc
disp('Problem 5.13: Scott Thomas')

x = 0:0.01:5;
yreal1 = real(sin(i*x));
yimag1 = imag(sin(i*x));

yreal2 = real(i*sinh(x));
yimag2 = imag(i*sinh(x));

subplot(2,1,1)
plot(x, yreal1,x, yreal2), ylabel('Real Parts'),grid on
title('Problem 5.13: Scott Thomas'), legend('sin(i*x)','i*sinh(x)','Location','NorthWest')
subplot(2,1,2)
plot(x, yimag1,x, yimag2), xlabel('x')
ylabel('Imaginary Parts'),grid on, legend('sin(i*x)','i*sinh(x)','Location','NorthWest')
```

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