MATH-6840
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Example of using LaTeX for problem set solutions

1. *I would often have the original question restated here in italics.*

   Then my response would appear here. Assume in this case that I was asked about a heat equation. In LaTeX the equation can be nicely displayed like

$$u_t(x,t) = \nu u_{xx}(x,t)$$
$$u(x,0) = u_0(x).$$

2. *We might also have need to submit plots and code. For example, suppose we were asked to plot* $\sinh(x)$ *and* $\cosh(x)$ *for* $x \in [-\pi, \pi]$.

   The requested plot is given in Figure 1, and the MATLAB code to produce this is given in Listing 1.

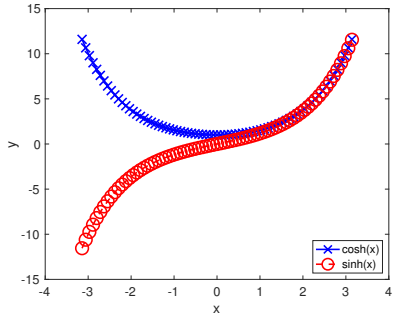

Figure 1: Example plot of $\sinh(x)$ and $\cosh(x)$.

Listing 1: Example code

```
clear all
fs = 16; % font size
lw = 2; % line wideth
ms = 16; % marker size

m  = 75;
x  = linspace(-pi,pi,m);
y1 = cosh(x);
y2 = sinh(x);

figure
plot( x,y1,'bx-', 'lineWidth',lw, 'MarkerSize',ms );
hold on
plot( x,y2,'ro--', 'lineWidth',lw, 'MarkerSize',ms );
hold off
xlabel( 'x' );
ylabel( 'y' );
legend( 'cosh(x)','sinh(x)', 'Location','SouthEast' );
```

```
19 set(gca,'FontSize',fs);
20 plotName = sprintf('images/plotExample.eps');
21 fprintf('Saving␣file=[%s]\n',plotName);
22 print('-depsc2',plotName);
```