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| %clears command window  clc; clear;    %Exercises    %Exercise 1  fprintf('Exercise 1 \n') %Prints the exercise number  syms x %setting symbolic variables x and y for equasions  eqn = x^2-5\*x+6==0; %Setting up 2 questions  S = solve(eqn,x); %this will solve for x and y  fprintf('x = (%0.1f and %0.1f)\n', S(1), S(2))      %Exercise 2  fprintf('\nExercise 2 \n') %Prints the exercise number  syms x y z %sets symbolic variables x, y, and z  eqns2 = [2\*x+y-2\*z==3, x-y-z==0, x+y+3\*z==12]; %set 3 equasions using symbolic x,y,&z  S2 = solve(eqns2,[x y z]); %solves for x,y,&z  S2.x; %gives value of x  S2.y; %gives value of y  S2.z; %gives value of z  fprintf('x = (%0.1f)\n', S2.x) %Prints the values  fprintf('y = (%0.1f)\n', S2.y)  fprintf('z = (%0.1f)\n', S2.z)    %Exercise 3  fprintf('\nExercise 3 \n') %Prints the exercise number  syms h k  r = 6.5; % Radius of the circle  x1 = 1; y1 = 4; % Point P1 on the two circles  x2 = 5; y2 = 1; % Point P2 on the two circles  eqns3 = [(x1-h)^2+(y1-k)^2==r^2, (x2-h)^2+(y2-k)^2==r^2]; %setting up the 2 equasions needed  [Ch, Ck] = solve(eqns3); % solving for centers of the circles  fprintf('Center 1(%0.1f, %0.1f)\n',Ch(1),Ch(2)) %Print out the centers  fprintf('Center 2 (%0.1f, %0.1f)\n',Ck(1),Ck(2))    %Exercise 4  fprintf('\nExercise 4 \n') %Prints the exercise number  figure(1)%Creates a window specifically for this graph  ezplot('cos(x)', [-4, 4]) %setting up the graphs  hold on  ezplot('x^2-4', [-4, 4])  %graph labels  title('Plot of cos(x) = x^2-4')  xlabel('x')  ylabel('y')  hold off  %setting up and solving for intersections  syms x %setting symbolic variable x  eqn = cos(x) == x^2-4; %setting up equation  %finding intersections  V1 = vpasolve(eqn, x, [-3 -1]); %finding first solution  V2 = vpasolve(eqn, x, [1 3]); %finding second solution  fprintf('1st Intersection at x = %0.1f\n',V1)  fprintf('2nd Intersection at x = %0.1f\n',V2)    %Exercise 5  fprintf('\nExercise 5 \n') %Prints the exercise number  %cos(x) == sin(x) at 45 degrees and 224 degrees infinitely  figure(2)%Creates a window specifically for this graph  ezplot('sin(x)', [0, 10])  hold on  ezplot('cos(x)', [0, 10])  %graph labels  title('Plot of sin(x) = cos(x)')  xlabel('x')  ylabel('y')  hold off    syms x  eqn5 = cos(x) == sin(x);  V3 = vpasolve(eqn5, x, [0 2]);  V4 = vpasolve(eqn5, x, [3 5]);  V5 = vpasolve(eqn5, x, [6 8]);  fprintf('1st Intersection at x = %0.1f\n',V3)  fprintf('2nd Intersection at x = %0.1f\n',V4)  fprintf('3rd Intersection at x = %0.1f\n',V5)    %Exercise 6  fprintf('\nExercise 6 \n') %Prints the exercise number  %we must design 2 equasions that intersect at 2 different points  figure(3)%Creates a window specifically for thsi graph  ezplot('x^2+1', [-4, 4]) %setting up the graphs  hold on  ezplot('sin(x)+2', [-4, 4])  %graph labels  title('Plot of cos(x) = x^2-4')  xlabel('x')  ylabel('y')  hold off    syms x  eqn5 = sin(x)+2 == x^2+1; %This the the equasion i came up with that intersects and 2 points  V6 = vpasolve(eqn5, x, [-1 0]);  V7 = vpasolve(eqn5, x, [1 2]);  fprintf('1st Intersection at x = %0.1f\n',V6)  fprintf('2nd Intersection at x = %0.1f\n',V7)    %Note you will only see the last graph in the script be plotted  %To get other graphs, comment out the plot commands in all other exercises |

**Output**

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| Exercise 1  x = (2.0 and 3.0)  Exercise 2  x = (3.5)  y = (1.0)  z = (2.5)  Exercise 3  Center 1(-0.6, 6.6)  Center 2 (-2.3, 7.3)  Exercise 4  1st Intersection at x = -1.9  2nd Intersection at x = 1.9  Exercise 5  1st Intersection at x = 0.8  2nd Intersection at x = 3.9  3rd Intersection at x = 7.1  Exercise 6  1st Intersection at x = -0.6  2nd Intersection at x = 1.4  >> |

* **What went well?** 
  + I would say that most of the lab was straight forward and easy to comprehend. No video was needed as the Lab manual was very well written in explain to use what the functions do and how to implement them for each exercise.
* **What didn’t go well?** 
  + Exercise 3 was probably the most challenging problem. I thin a video demonstrating a similar problem or having an example would also help. Also, there was no way for use to display the answer unless we new about the fprintf() function and how to use it to display the answer. I think this should have been explained in the lab as well.
  + I was confused by exercise 4 when it asked for 3 different answer to sin(x) = cos(x), as there are only 2 solutions (and their multiples). I think this could have been slightly better explained, but it was also just my misunderstanding of the problem as well.
* **How would you improve the lab for next semester?**
  + I would improve the lab by explaining the things better than I mentioned in the “*What didn’t go well*” section and have a way to submit labs via canvas instead of email. Canvas would seem like an easier and more convenient way of submitting rather than email. Also, I almost forgot to submit my lab because there is no assignment due date in canvas. Though, this is mostly my fault as I should keep up with things, having so much due in the week, it can be easy to forget to submit a lab when there is no assignment in canvas to remind you.