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## Practice Problems

Que 1.	Tower – MATLAB	Block – MATLAB Script
<p>Write a MATLAB Program which returns every other element of the vector passed in. That is, it returns the all odd-numbered elements, starting with the first.</p> <p>Examples:</p> <ol style="list-style-type: none"><li>1. Input <math>x = [1\ 3\ 2\ 4\ 3\ 5]</math> Output <math>y</math> is <math>[1\ 2\ 3]</math></li><li>2. Input <math>x = [5\ 9\ 3\ 2\ 2\ 0\ -1]</math> Output <math>y</math> is <math>[5\ 3\ 2\ -1]</math></li></ol>		

Que 2.	Tower – MATLAB	Block – MATLAB Script
<p>A vector is given by <math>x = [-3.5\ -5\ 6.2\ 11\ 0\ 8.1\ -9\ 0\ 3\ -1\ 3\ 2.5]</math>. Using conditional statements and loops, write a program that creates two vectors from <math>x</math>. One (call it P) that contains the positive elements of <math>x</math>, and a second (call it N) that contains the negative elements of <math>x</math>. In both P and N, the elements are in the same order as in <math>x</math>.</p>		

Que 3.	Tower – MATLAB	Block – MATLAB Script
<p>Write a program that determines the center and the radius of a circle that passes through three given points. The program asks the user to enter the coordinates of the points one at a time. The program displays the coordinate of the center and the radius and makes a plot of the circle, and the three points displayed on the plot with asterisk markers. Execute the program to find the circle that passes through the points (13, 15), (4, 18), and (19, 3).</p>		

Que 4.	Tower – MATLAB	Block – MATLAB Script
<p>Write a user-defined function that calculates the average and the standard deviation of a list of numbers.</p> <p>Use the function to calculate the average and the standard deviation of the following list of grades:</p> <p>80 75 91 60 79 89 65 80 95 50 81</p>		

Que 5.	Tower – MATLAB	Block - MATLAB Script
<p>Write a user-defined function that sorts the elements of a vector from the largest to the smallest. For the function name and arguments use <code>y=downsort(x)</code>. The input to the function is a vector <code>x</code> of any length, and the output <code>y</code> is a vector in which the elements of <code>x</code> are arranged in a descending order. Do not use the MATLAB built-in function <code>sort</code>, <code>max</code>, or <code>min</code>.</p> <p>Test your function on a vector with 14 numbers (integers) randomly distributed between <code>-30</code> and <code>30</code>. Use the MATLAB <code>'randi'</code> function to generate the initial vector.</p>		