

PART 1

```
x = [1, 3, 5, 10];  
y = addeven(x);  
disp(y);
```

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```
x = 2:2:1000;  
y = addeven(x);  
disp(y);
```

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PART 2

```
% Explanation of the Program  
% L=length(x);: This line calculates the length of the array x and stores it in the  
variable L.  
% This means L will hold the number of elements in the array x.  
% for i=1:L: This line starts a loop that iterates over each index i from 1 to L.  
% if x(i) < 0: Inside the loop, this condition checks if the current element x(i)  
is less than 0.  
% x(i)=-1;: If the condition is true (i.e., the element is negative), this line  
sets the current element x(i) to -1.  
  
% Same functionality without using a for loop: x(x < 0) = -1;  
% Explanation of the New Code  
% x < 0: This creates a logical array where each element is true (1) if the  
corresponding element in x is less than 0, and false (0) otherwise.  
% x(x < 0) = -1;: This line uses logical indexing to directly set all elements of x  
that are negative to -1.
```

PART 3

```
x = 1:1000;  
mean_x = mean(x);  
variance = sum((x - mean_x).^2) / length(x);  
disp(['Varyans: ', num2str(variance)]);
```

Varyans: 83333.25

PART 4

```
x = rand(1, 1000);  
f = zeros(size(x));  
f(x >= 0.2) = 0.2;  
f(x < 0.2) = -0.2;  
disp(f);
```

0.2000 0.2000 -0.2000 0.2000 0.2000 -0.2000 0.2000 0.2000 0.2000 0.2000 -0.2000 0

FUNCTIONS

```
function y = addeven(x)
    even_indices = 2:2:length(x);
    y = sum(x(even_indices));
end
```