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% Class: EE480 Online
% Semester: Fall 2023
% HW_2
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```
% Basic Problems
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```
%% *****question 1.1*****
```

```
%1.1(a)
```

```
t = 0:0.1:1;
x_t = 1 - t;
```

```
%plotting the x(t)
subplot(3,2,1);
plot(t,x_t);
title('x(t)=1-t');
grid on;
xlabel('t');
ylabel('x(t)');
```

```
%plotting x(t+1)
%let t+1 = t1
x_t1 = 1-(t+1);
subplot(3,2,2);
plot(t,x_t1);
title('x(t+1)=1-t');
grid on;
xlabel('t');
ylabel('x(t+1)');
```

```
%plotting x(t-1)
%let t-1 = t2
x_t2 = 1-(t-1);
subplot(3,2,3);
plot(t,x_t2);
title('x(t-1)=1-t');
grid on;
xlabel('t');
ylabel('x(t-1)');
```

```
%plotting x(-t)
%let -t = t3
x_t3 = 1-(-t);
subplot(3,2,4);
plot(t,x_t3);
title('x(-t)=1-t');
grid on;
```

```
xlabel('t');  
ylabel('x(-t)');
```

```
%1.1(b)
```

```
%plotting 0.5[x(t)+x(-t)]  
%note x_t=x(t) and x_t3=x(-t)  
signal_addition = 0.5 * (x_t + x_t3);  
subplot(3,2,5);  
plot(t,signal_addition);  
title('signal_ addition=0.5[x(t)+x(-t)]');  
grid on;  
xlabel('t');  
ylabel('signal_ addition');
```

```
%plotting 0.5[x(t)-x(-t)]  
signal_subtraction = 0.5 * (x_t - x_t3);  
subplot(3,2,6);  
plot(t,signal_subtraction);  
title('signal_ subtraction=0.5[x(t)+x(-t)]');  
grid on;  
xlabel('t');  
ylabel('signal_ subtraction');
```

```
%% *****question 1.2*****
```

```
%1.2(a)
```

```
t = 0:0.1:1;  
x_t = t;
```

```
%plotting x(t+1)  
t1 = t + 1;  
x_t1 = t1;  
subplot(3,1,1)  
plot(t,x_t1);  
title('x(t+1)=t');  
grid on;  
xlabel('t');  
ylabel('x(t+1)');
```

```
%plotting x(-t-1)  
t2 = -t + 1;  
x_t2 = t2;  
subplot(3,1,2)  
plot(t,x_t2);  
title('x(-t+1)=t');  
grid on;
```

```
xlabel('t');
ylabel('x(-t+1)');

%plotting y(t)
y_t = x_t1 + x_t2;
subplot(3,1,3)
plot(t,y_t);
title('y(t)=x(t+1) + x(-t+1)');
grid on;
xlabel('t');
ylabel('y(t)');
```