Digital Signals Processing Assignment #1

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Question #1

Code

```
mu = mean(A2Q1);
variance = var(A2Q1);
power = 0;
disp(mu);
disp(variance);
disp(power);
```

Results

This snippet shows the mean, variance, and average power, respectively.

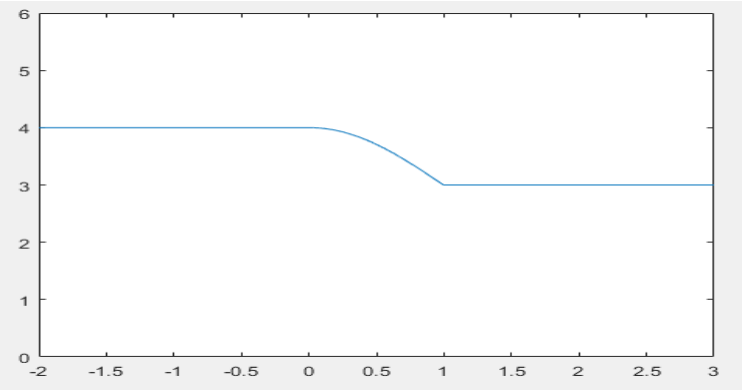
```
    0.3196

    0.1497

         0
```

Question #2

Code

```
Y1 = 4*ones(1, 200);
f2 = 0.25;
t2 = linspace(0, 1, 100);
phase = 90;
phase_in_rad = deg2rad(phase);
Y2 = sin((2*pi*f2*t2)+phase_in_rad)+3;
Y3 = 3*ones(1, 200);
Y = [Y1 Y2 Y3];
t = linspace(-2, 3, 500);
plot(t, Y);
ylim([0 6]);
```

Result

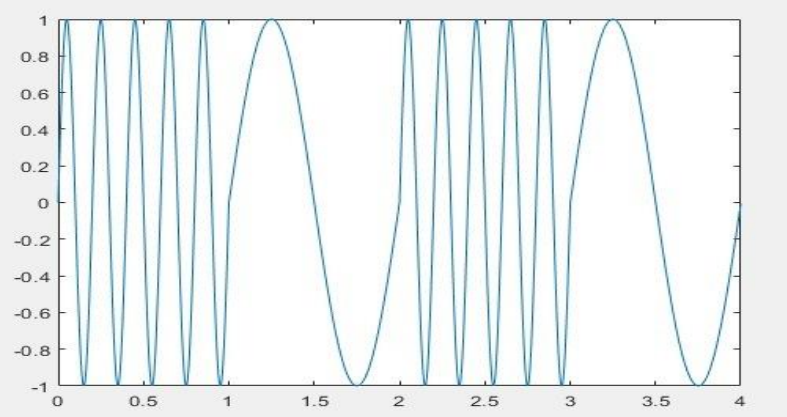


Question #3

Code

```
X1 = A2Q3_1(1:1000);
X2 = A2Q3_2(1001:2000);
X3 = A2Q3_1(2001:3000);
X4 = A2Q3_2(3001:4000);
X = [X1 X2 X3 X4];
t_tot = linspace(0, 4, 4000);
plot(t_tot, X);
```

Result

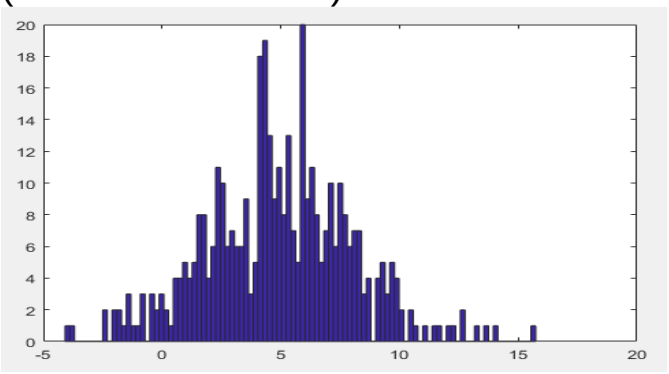


Question #5

Code

```
hist(A2Q5, 100);
mun = mean(A2Q5);
standardDeviation = std(A2Q5);
disp(mun);
disp(standardDeviation);
```

Results 4.9062 and 3.1041 are the mean and standard deviation respectively (Normal Distribution)



4.9062

3.1041