

# Homework 8

## Q1

Optimal cost is 75.24124400000001

Production amounts:

Period 1: produce 6

Period 2:

If inventory=0: produce 6

If inventory=1: produce 6

If inventory=2: produce 6

If inventory=3: produce 6

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

If inventory=11: produce 0

If inventory=12: produce 0

Period 3:

If inventory=0: produce 6

If inventory=1: produce 6

If inventory=2: produce 6

If inventory=3: produce 6

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

If inventory=11: produce 0

If inventory=12: produce 0

Period 4:

If inventory=0: produce 6

If inventory=1: produce 6

If inventory=2: produce 6

If inventory=3: produce 6

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

If inventory=11: produce 0

If inventory=12: produce 0

Period 5:

If inventory=0: produce 6  
If inventory=1: produce 6  
If inventory=2: produce 6  
If inventory=3: produce 5  
If inventory=4: produce 0  
If inventory=5: produce 0  
If inventory=6: produce 0  
If inventory=7: produce 0  
If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0  
If inventory=11: produce 0  
If inventory=12: produce 0

Period 6:

If inventory=0: produce 6  
If inventory=1: produce 6  
If inventory=2: produce 5  
If inventory=3: produce 4  
If inventory=4: produce 0  
If inventory=5: produce 0  
If inventory=6: produce 0  
If inventory=7: produce 0  
If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0  
If inventory=11: produce 0  
If inventory=12: produce 0

Period 7:

If inventory=0: produce 4  
If inventory=1: produce 3  
If inventory=2: produce 2  
If inventory=3: produce 1  
If inventory=4: produce 0  
If inventory=5: produce 0  
If inventory=6: produce 0  
If inventory=7: produce 0  
If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0  
If inventory=11: produce 0  
If inventory=12: produce 0

```

<html>
<body>

<h1>Homework 8</h1>

<h2>Q1</h2>

<script type="text/javascript">

var hugeNumber = 1e20

var stages          = 7
var startInventory  = 3
var inventoryCapacity = 12
var productionCapacity = 6

var setupCost      = 10.0
var variableCost   = 3.0
var holdingCost    = 0.5
var salvageValue   = 2.0

var minDemand      = 0
var maxDemand      = 4

var probDemand     = new Array(0.1, 0.3, 0.3, 0.2, 0.1)

var f = new Array()
var x = new Array()

for(t=1; t<=stages; t++)
{
    f[t] = new Array()
    x[t] = new Array()
}
f[stages+1] = new Array()

for(i=0; i<=inventoryCapacity; i++)
{
    f[stages+1][i] = -salvageValue*i
}

for(t=stages; t>0; t--)
{
    for(i=0; i<=inventoryCapacity; i++)
    {
        minProduction = maxDemand - i
        if (minProduction < 0)
            { minProduction = 0 }
        maxProduction = inventoryCapacity - i + minDemand
        if (maxProduction > productionCapacity)
            { maxProduction = productionCapacity }

        value = hugeNumber
        bestMove = 0

        for(p=minProduction; p<=maxProduction; p++)
        {
            productionCost = 0.0
            if (p > 0)
                { productionCost = setupCost + variableCost*p }

            moveValue = productionCost
            for(d=minDemand; d<=maxDemand; d++)
            {
                j = i + p - d
                moveValue += probDemand[d]*(holdingCost*j + f[t+1][j])
            }
            if (moveValue < value)

```

```

        {
            value = moveValue
            bestMove = p
        }
    }

    f[t][i] = value
    x[t][i] = bestMove
}
}

document.write("Optimal cost is " + f[1][startInventory] + "<br />")

document.write("Production amounts: <br />")
document.write("Period 1: produce " + x[1][startInventory] + "<br />")
for(t=2; t<=stages; t++)
{
    document.write("Period " + t + ": <br />")
    for(i=0; i<=inventoryCapacity; i++)
    {
        document.write("    If inventory=" + i + ": produce ")
        document.write(x[t][i] + "<br />")
    }
}

</script>

</body>
</html>

```

## Q2

Optimal profit is 14021.847658750183

Production amounts:

Period 1: produce 10

Period 2:

If inventory=0: produce 10

If inventory=1: produce 10

If inventory=2: produce 10

If inventory=3: produce 10

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

Period 3:

If inventory=0: produce 10

If inventory=1: produce 10

If inventory=2: produce 10

If inventory=3: produce 10

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

Period 4:

If inventory=0: produce 10

If inventory=1: produce 10

If inventory=2: produce 10

If inventory=3: produce 9

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

Period 5:

If inventory=0: produce 10

If inventory=1: produce 10

If inventory=2: produce 10

If inventory=3: produce 9

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0  
Period 6:  
If inventory=0: produce 10  
If inventory=1: produce 10  
If inventory=2: produce 9  
If inventory=3: produce 0  
If inventory=4: produce 0  
If inventory=5: produce 0  
If inventory=6: produce 0  
If inventory=7: produce 0  
If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0  
Period 7:  
If inventory=0: produce 10  
If inventory=1: produce 9  
If inventory=2: produce 8  
If inventory=3: produce 0  
If inventory=4: produce 0  
If inventory=5: produce 0  
If inventory=6: produce 0  
If inventory=7: produce 0  
If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0  
Period 8:  
If inventory=0: produce 10  
If inventory=1: produce 9  
If inventory=2: produce 0  
If inventory=3: produce 0  
If inventory=4: produce 0  
If inventory=5: produce 0  
If inventory=6: produce 0  
If inventory=7: produce 0  
If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0  
Period 9:  
If inventory=0: produce 10  
If inventory=1: produce 10  
If inventory=2: produce 0  
If inventory=3: produce 0  
If inventory=4: produce 0  
If inventory=5: produce 0  
If inventory=6: produce 0  
If inventory=7: produce 0  
If inventory=8: produce 0  
If inventory=9: produce 0  
If inventory=10: produce 0

Period 10:

If inventory=0: produce 10

If inventory=1: produce 10

If inventory=2: produce 9

If inventory=3: produce 0

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

Period 11:

If inventory=0: produce 9

If inventory=1: produce 8

If inventory=2: produce 7

If inventory=3: produce 6

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

Period 12:

If inventory=0: produce 5

If inventory=1: produce 4

If inventory=2: produce 0

If inventory=3: produce 0

If inventory=4: produce 0

If inventory=5: produce 0

If inventory=6: produce 0

If inventory=7: produce 0

If inventory=8: produce 0

If inventory=9: produce 0

If inventory=10: produce 0

```

<html>
<head>
<script type="text/javascript">
// Returns the distribution of a Poisson variable with mean "mean",
// truncated so its largest possible value is "max".

function poisson(mean,max)
{
    cum = 0
    term = Math.exp(-mean)
    toReturn = new Array()
    var i = 0
    for(; i<max; )
    {
        toReturn[i] = term
        cum += term
        i++
        term *= (mean/i)
    }
    toReturn[max] = 1 - cum
    return toReturn
}
</script>
</head>

<h2>Q2</h2>

<body>
<script type="text/javascript">

var hugeNumber = 1e20

var stages          = 12
var startInventory  = 0
var inventoryCapacity = 10
var productionCapacity = 10

var setupCost      = 1000
var variableCost   = 400
var holdingCost    = 75
var salvageValue   = 200
var unitRevenue    = 900

var meanDemand = new Array(0,4.5,4.9,5.1,4.8,4.2,3.4,3.1,3.0,3.2,4.0,4.2,4.3)

var demandProb = 0

var f = new Array()
var x = new Array()

for(t=1; t<=stages; t++)
{
    f[t] = new Array()
    x[t] = new Array()
}
f[stages+1] = new Array()

for(i=0; i<=inventoryCapacity; i++)
{
    f[stages+1][i] = salvageValue*i
}

for(t=stages; t>0; t--)
{
    for(i=0; i<=inventoryCapacity; i++)
    {
        value = -hugeNumber
        bestMove = 0

        for(p=0; p<=productionCapacity; p++)
        {
            productionCost = 0.0
            if (p > 0)
                { productionCost = setupCost + variableCost*p }

            onHand = i + p
            demandProb = poisson(meanDemand[t],onHand)

```

```

moveValue = -productionCost

for(d=0; d<=onHand; d++)
{
    j = onHand - d
    if (j > inventoryCapacity)
        { j = inventoryCapacity }
    salvaged = onHand - d - j
    moveValue += demandProb[d]*(unitRevenue*d + salvaged*salvageValue - holdingCost*j + f[t+1][j])
}

if (moveValue > value)
{
    value = moveValue
    bestMove = p
}
}

f[t][i] = value
x[t][i] = bestMove
}
}

document.write("Optimal profit is " + f[1][startInventory] + "<br />")

document.write("Production amounts: <br />")
document.write("Period 1: produce " + x[1][startInventory] + "<br />")
for(t=2; t<=stages; t++)
{
    document.write("Period " + t + ": <br />")
    for(i=0; i<=inventoryCapacity; i++)
    {
        document.write("    If inventory=" + i + ": produce ")
        document.write(x[t][i] + "<br />")
    }
}

</script>

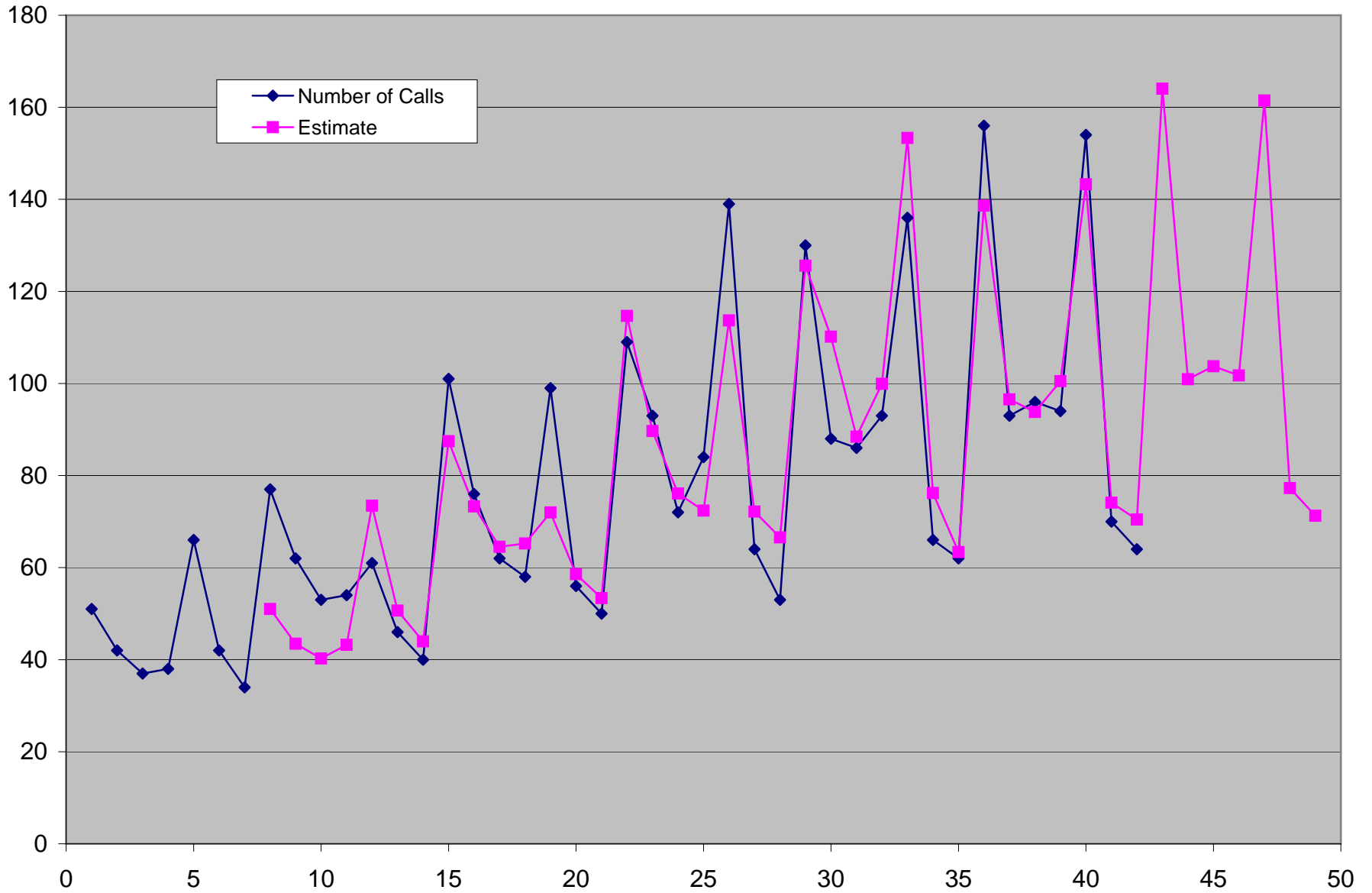
</body>
</html>

```

## Q3(a)

	A	B	C	D	E	F	G	H
1	Week	Day of Week	Day	Number of Calls	Et	Tt	St	Estimate
2	1	Monday	1	51	44.29	0.00	6.71	
3	1	Tuesday	2	42	44.29	0.00	-2.29	
4	1	Wednesday	3	37	44.29	0.00	-7.29	
5	1	Thursday	4	38	44.29	0.00	-6.29	
6	1	Friday	5	66	44.29	0.00	21.71	
7	1	Saturday	6	42	44.29	0.00	-2.29	
8	1	Sunday	7	34	44.29	0.00	-10.29	
9	2	Monday	8	77	45.02	0.73	31.98	51.00
10	2	Tuesday	9	62	46.28	1.26	15.72	43.47
11	2	Wednesday	10	53	47.89	1.62	5.11	40.25
12	2	Thursday	11	54	49.81	1.92	4.19	43.22
13	2	Friday	12	61	51.38	1.57	9.62	73.45
14	2	Saturday	13	46	52.82	1.44	-6.82	50.67
15	2	Sunday	14	40	54.15	1.33	-14.15	43.97
16	3	Monday	15	101	55.86	1.71	45.14	87.45
17	3	Tuesday	16	76	57.64	1.78	18.36	73.29
18	3	Wednesday	17	62	59.35	1.71	2.65	64.53
19	3	Thursday	18	58	60.86	1.51	-2.86	65.25
20	3	Friday	19	99	63.13	2.27	35.87	71.99
21	3	Saturday	20	56	65.33	2.20	-9.33	58.58
22	3	Sunday	21	50	67.43	2.10	-17.43	53.38
23	4	Monday	22	109	69.38	1.94	39.62	114.68
24	4	Tuesday	23	93	71.41	2.04	21.59	89.68
25	4	Wednesday	24	72	73.33	1.92	-1.33	76.09
26	4	Thursday	25	84	75.58	2.25	8.42	72.39
27	4	Friday	26	139	78.54	2.96	60.46	113.70
28	4	Saturday	27	64	81.27	2.73	-17.27	72.17
29	4	Sunday	28	53	83.62	2.35	-30.62	66.57
30	5	Monday	29	130	86.10	2.47	43.90	125.60
31	5	Tuesday	30	88	87.94	1.85	0.06	110.16
32	5	Wednesday	31	86	89.72	1.78	-3.72	88.46
33	5	Thursday	32	93	91.30	1.58	1.70	99.92
34	5	Friday	33	136	92.40	1.09	43.60	153.34
35	5	Saturday	34	66	93.20	0.80	-27.20	76.22
36	5	Sunday	35	62	93.97	0.77	-31.97	63.38
37	6	Monday	36	156	95.22	1.26	60.78	138.64
38	6	Tuesday	37	93	96.38	1.16	-3.38	96.54
39	6	Wednesday	38	96	97.60	1.22	-1.60	93.81
40	6	Thursday	39	94	98.63	1.03	-4.63	100.51
41	6	Friday	40	154	99.97	1.34	54.03	143.27
42	6	Saturday	41	70	101.19	1.22	-31.19	74.10
43	6	Sunday	42	64	102.23	1.04	-38.23	70.44
44	7	Monday	43		103.27	1.04		164.04
45	7	Tuesday	44		104.31	1.04		100.93
46	7	Wednesday	45		105.35	1.04		103.75
47	7	Thursday	46		106.39	1.04		101.75
48	7	Friday	47		107.42	1.04		161.46
49	7	Saturday	48		108.46	1.04		77.27
50	7	Sunday	49		109.5	1.04		71.27
51								
52				Alpha	0.0282		MSE	145.16
53				Beta	1.0000			
54				Gamma	1.0000			

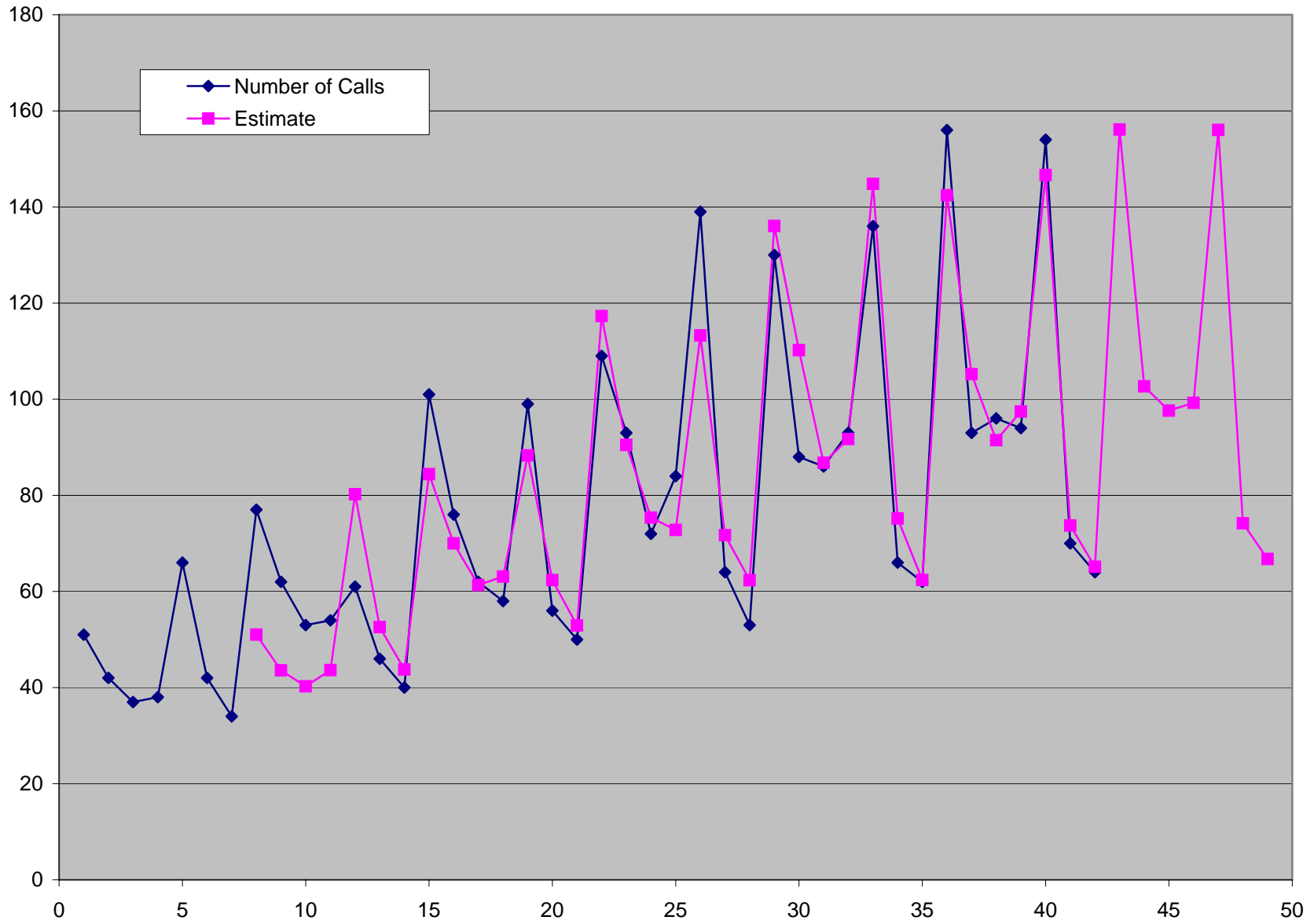
Q3(a) Chart



## Q3(b)

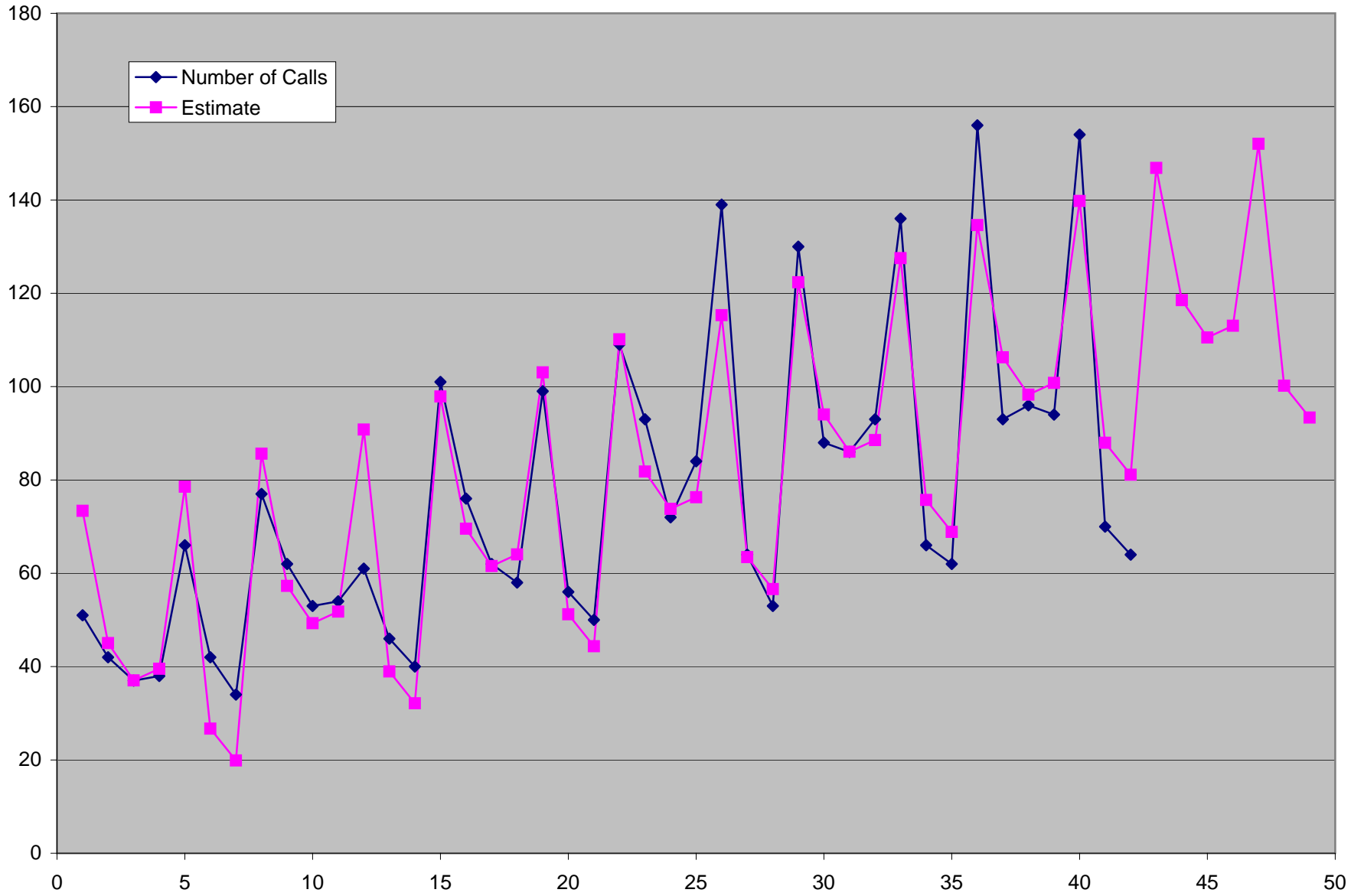
	A	B	C	D	E	F	G	H
1	Week	Day of Week	Day	Number of Calls	Et	Tt	St	Estimate
2	1	Monday	1	51	44.29	0.00	1.15	
3	1	Tuesday	2	42	44.29	0.00	0.95	
4	1	Wednesday	3	37	44.29	0.00	0.84	
5	1	Thursday	4	38	44.29	0.00	0.86	
6	1	Friday	5	66	44.29	0.00	1.49	
7	1	Saturday	6	42	44.29	0.00	0.95	
8	1	Sunday	7	34	44.29	0.00	0.77	
9	2	Monday	8	77	45.11	0.83	1.44	51.00
10	2	Tuesday	9	62	46.66	1.54	1.15	43.57
11	2	Wednesday	10	53	48.76	2.10	0.97	40.27
12	2	Thursday	11	54	51.30	2.54	0.96	43.64
13	2	Friday	12	61	53.37	2.07	1.31	80.24
14	2	Saturday	13	46	55.18	1.82	0.89	52.58
15	2	Sunday	14	40	56.82	1.64	0.73	43.76
16	3	Monday	15	101	58.88	2.06	1.59	84.42
17	3	Tuesday	16	76	61.12	2.25	1.20	70.01
18	3	Wednesday	17	62	63.40	2.27	0.97	61.35
19	3	Thursday	18	58	65.48	2.08	0.92	63.08
20	3	Friday	19	99	67.85	2.38	1.39	88.31
21	3	Saturday	20	56	69.97	2.12	0.84	62.36
22	3	Sunday	21	50	71.94	1.97	0.71	52.92
23	4	Monday	22	109	73.72	1.78	1.53	117.31
24	4	Tuesday	23	93	75.57	1.85	1.22	90.50
25	4	Wednesday	24	72	77.30	1.73	0.95	75.36
26	4	Thursday	25	84	79.47	2.17	0.99	72.80
27	4	Friday	26	139	82.33	2.85	1.55	113.27
28	4	Saturday	27	64	84.85	2.52	0.80	71.70
29	4	Sunday	28	53	86.89	2.04	0.66	62.34
30	5	Monday	29	130	88.78	1.89	1.50	136.05
31	5	Tuesday	30	88	90.00	1.22	1.09	110.21
32	5	Wednesday	31	86	91.20	1.19	0.95	86.78
33	5	Thursday	32	93	92.44	1.24	1.00	91.72
34	5	Friday	33	136	93.47	1.03	1.50	144.82
35	5	Saturday	34	66	94.08	0.61	0.75	75.19
36	5	Sunday	35	62	94.66	0.59	0.66	62.39
37	6	Monday	36	156	95.58	0.92	1.57	142.43
38	6	Tuesday	37	93	96.09	0.51	1.03	105.20
39	6	Wednesday	38	96	96.77	0.68	0.97	91.47
40	6	Thursday	39	94	97.33	0.56	0.98	97.43
41	6	Friday	40	154	98.07	0.74	1.54	146.64
42	6	Saturday	41	70	98.62	0.56	0.73	73.72
43	6	Sunday	42	64	99.11	0.49	0.65	65.15
44	7	Monday	43		99.60	0.49		156.12
45	7	Tuesday	44		100.1	0.49		102.67
46	7	Wednesday	45		100.59	0.49		97.64
47	7	Thursday	46		101.08	0.49		99.25
48	7	Friday	47		101.57	0.49		156.03
49	7	Saturday	48		102.06	0.49		74.19
50	7	Sunday	49		102.55	0.49		66.76
51								
52				<b>Alpha</b>	0.0367		<b>MSE</b>	124.67
53				<b>Beta</b>	1.0000			
54				<b>Gamma</b>	0.5270			

Q3(b) Chart





Q3(c) Chart



## Optional Q3(c) stats

## SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.937825608
R Square	0.879516871
Adjusted R Square	0.854711521
Standard Error	12.09225906
Observations	42

## ANOVA

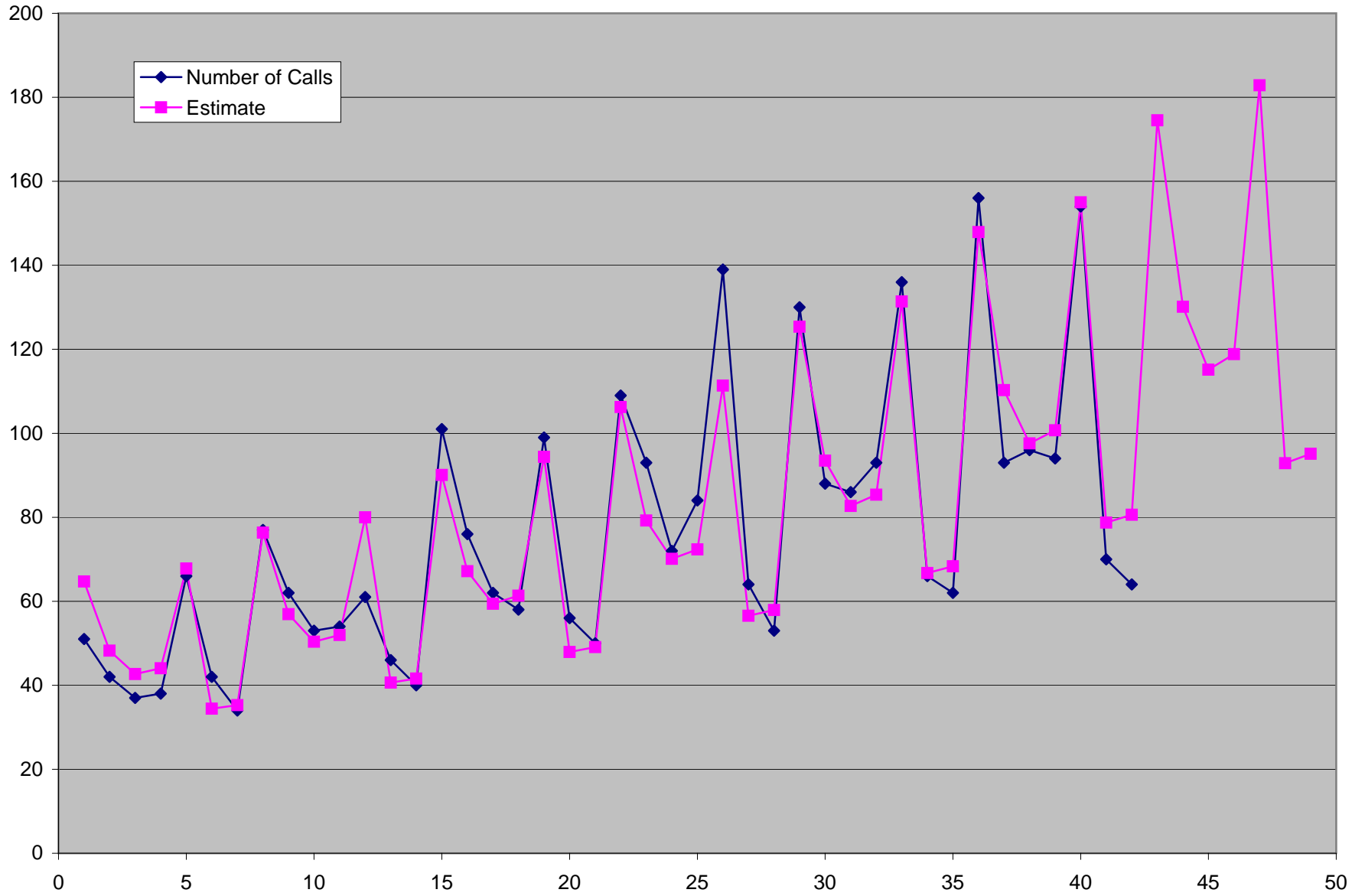
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	36292.07007	5184.581438	35.45674103	8.03305E-14
Residual	34	4971.572789	146.2227291		
Total	41	41263.64286			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	7.628571429	6.244415726	1.221662965	0.230238199	-5.061599804	20.31874266	-5.061599804	20.31874266
X Variable 1	1.749854227	0.15607788	11.21141717	5.7668E-13	1.432666021	2.067042434	1.432666021	2.067042434
X Variable 2	63.99912536	7.043996072	9.085627633	1.2811E-10	49.68401243	78.3142383	49.68401243	78.3142383
X Variable 3	33.9159378	7.024949631	4.827926119	2.86788E-05	19.63953187	48.19234374	19.63953187	48.19234374
X Variable 4	24.16608358	7.009327683	3.447703499	0.001524618	9.921425239	38.41074191	9.921425239	38.41074191
X Variable 5	24.91622935	6.997153167	3.560909523	0.001116645	10.69631259	39.13614611	10.69631259	39.13614611
X Variable 6	62.16637512	6.988444098	8.895595965	2.13694E-10	47.96415731	76.36859294	47.96415731	76.36859294
X Variable 7	8.583187561	6.983213444	1.229117172	0.227466822	-5.608400291	22.77477541	-5.608400291	22.77477541

Q3(d)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Week	Day of Week	Day	Number of Calls	Log(Calls)	Day	Mon	Tues	Weds	Thurs	Fri	Sat	Est(Log)	Estimate
2	1	Monday	1	51	3.9318	1	1	0	0	0	0	0	4.1698	64.70
3	1	Tuesday	2	42	3.7377	2	0	1	0	0	0	0	3.8763	48.24
4	1	Wednesday	3	37	3.6109	3	0	0	1	0	0	0	3.7539	42.69
5	1	Thursday	4	38	3.6376	4	0	0	0	1	0	0	3.7855	44.06
6	1	Friday	5	66	4.1897	5	0	0	0	0	1	0	4.2165	67.80
7	1	Saturday	6	42	3.7377	6	0	0	0	0	0	1	3.5391	34.44
8	1	Sunday	7	34	3.5264	7	0	0	0	0	0	0	3.5627	35.26
9	2	Monday	8	77	4.3438	8	1	0	0	0	0	0	4.3352	76.34
10	2	Tuesday	9	62	4.1271	9	0	1	0	0	0	0	4.0416	56.92
11	2	Wednesday	10	53	3.9703	10	0	0	1	0	0	0	3.9192	50.36
12	2	Thursday	11	54	3.9890	11	0	0	0	1	0	0	3.9509	51.98
13	2	Friday	12	61	4.1109	12	0	0	0	0	1	0	4.3819	79.99
14	2	Saturday	13	46	3.8286	13	0	0	0	0	0	1	3.7045	40.63
15	2	Sunday	14	40	3.6889	14	0	0	0	0	0	0	3.7281	41.60
16	3	Monday	15	101	4.6151	15	1	0	0	0	0	0	4.5006	90.07
17	3	Tuesday	16	76	4.3307	16	0	1	0	0	0	0	4.2070	67.15
18	3	Wednesday	17	62	4.1271	17	0	0	1	0	0	0	4.0846	59.42
19	3	Thursday	18	58	4.0604	18	0	0	0	1	0	0	4.1163	61.33
20	3	Friday	19	99	4.5951	19	0	0	0	0	1	0	4.5473	94.37
21	3	Saturday	20	56	4.0254	20	0	0	0	0	0	1	3.8699	47.94
22	3	Sunday	21	50	3.9120	21	0	0	0	0	0	0	3.8935	49.08
23	4	Monday	22	109	4.6913	22	1	0	0	0	0	0	4.6659	106.26
24	4	Tuesday	23	93	4.5326	23	0	1	0	0	0	0	4.3724	79.23
25	4	Wednesday	24	72	4.2767	24	0	0	1	0	0	0	4.2500	70.10
26	4	Thursday	25	84	4.4308	25	0	0	0	1	0	0	4.2816	72.36
27	4	Friday	26	139	4.9345	26	0	0	0	0	1	0	4.7126	111.35
28	4	Saturday	27	64	4.1589	27	0	0	0	0	0	1	4.0352	56.56
29	4	Sunday	28	53	3.9703	28	0	0	0	0	0	0	4.0588	57.91
30	5	Monday	29	130	4.8675	29	1	0	0	0	0	0	4.8313	125.37
31	5	Tuesday	30	88	4.4773	30	0	1	0	0	0	0	4.5377	93.48
32	5	Wednesday	31	86	4.4543	31	0	0	1	0	0	0	4.4153	82.71
33	5	Thursday	32	93	4.5326	32	0	0	0	1	0	0	4.4470	85.37
34	5	Friday	33	136	4.9127	33	0	0	0	0	1	0	4.8780	131.37
35	5	Saturday	34	66	4.1897	34	0	0	0	0	0	1	4.2006	66.73
36	5	Sunday	35	62	4.1271	35	0	0	0	0	0	0	4.2242	68.32
37	6	Monday	36	156	5.0499	36	1	0	0	0	0	0	4.9967	147.92
38	6	Tuesday	37	93	4.5326	37	0	1	0	0	0	0	4.7031	110.29
39	6	Wednesday	38	96	4.5643	38	0	0	1	0	0	0	4.5807	97.58
40	6	Thursday	39	94	4.5433	39	0	0	0	1	0	0	4.6124	100.72
41	6	Friday	40	154	5.0370	40	0	0	0	0	1	0	5.0434	154.99
42	6	Saturday	41	70	4.2485	41	0	0	0	0	0	1	4.3660	78.73
43	6	Sunday	42	64	4.1589	42	0	0	0	0	0	0	4.3896	80.61
44	7	Monday	43			43	1	0	0	0	0	0	5.1620	174.52
45	7	Tuesday	44			44	0	1	0	0	0	0	4.8685	130.12
46	7	Wednesday	45			45	0	0	1	0	0	0	4.7461	115.13
47	7	Thursday	46			46	0	0	0	1	0	0	4.7777	118.84
48	7	Friday	47			47	0	0	0	0	1	0	5.2087	182.87
49	7	Saturday	48			48	0	0	0	0	0	1	4.5313	92.88
50	7	Sunday	49			49	0	0	0	0	0	0	4.5550	95.10
51														
52														
53					Betas									
54					3.40	0.0236	0.749	0.4316	0.2856	0.2937	0.701	0.1579		
55													Logs	Estimates
56												MSE	0.013616	76.61

Q3(d) Chart



## Optional Q3(d) stats

## SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.960996767
R Square	0.923514786
Adjusted R Square	0.90776783
Standard Error	0.120916197
Observations	42

## ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	6.002252251	0.857464607	58.64719472	3.97811E-17
Residual	34	0.497104709	0.014620727		
Total	41	6.49935696			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	3.316535859	0.062440856	53.11483678	2.65963E-34	3.189640856	3.443430862	3.189640856	3.443430862
X Variable 1	0.02370311	0.001560696	15.18752276	1.02452E-16	0.020531396	0.026874825	0.020531396	0.026874825
X Variable 2	0.828204919	0.070436236	11.75822221	1.57768E-13	0.685061359	0.97134848	0.685061359	0.97134848
X Variable 3	0.510932348	0.070245782	7.273495046	2.01753E-08	0.368175837	0.653688859	0.368175837	0.653688859
X Variable 4	0.364834683	0.070089571	5.205263476	9.3021E-06	0.222395631	0.507273735	0.222395631	0.507273735
X Variable 5	0.372801318	0.069967832	5.328181639	6.43826E-06	0.230609669	0.514992968	0.230609669	0.514992968
X Variable 6	0.780099139	0.069880746	11.16329151	6.47527E-13	0.63808447	0.922113808	0.63808447	0.922113808
X Variable 7	0.157890345	0.069828442	2.261117958	0.0302645	0.01598197	0.29979872	0.01598197	0.29979872



Q3(e) Chart

