SCHOOL OF COMPUTING, FACULTY OF ENGINEERING

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SECI2143 PROBABILITY AND STATISTICAL DATA ANALYSIS

SECTION 08

PROJECT 2:

Human Stress Detection in and through Sleep

NAME	MATRIC NUMBER
NG KAI ZHENG	A21EC0101
LAI KAI CHIAN	A21EC0041
LEW CHIN HONG	A21EC0044
YEO CHUN TECK	A21EC0148

LECTURER NAME: DR. SHARIN HAZLIN BINTI HUSPI

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1.0 INTRODUCTION

As the pace of modern life is getting faster and faster, the quality of human life is also being improved. On the other hand, this scenario also brings a negative impact on humans, which will cause humans to become more stressed. Thus, human stress should be an issue that we must pay attention to. If we cannot find a way to handle or release our stress, we will become over-stressed. Over-stress would lead to an unhealthy lifestyle and consequently affect our daily life, such as lack of energy, causing people to become negative thinkers and even causing an increase in the suicide rate. This issue more frequently happened in modern countries, such as Korea, Japan and Europe. Human stress level is influenced by several factors and we need to figure out how these factors influence the stress level. Normally, human stress can be reflected or detected through sleeping habits, such as sleeping hours, respiration rate and heart rate during sleep. Hence, the objective of this project is to analyse and determine how sleeping habits reflect the human stress level. From the dataset, we expect to find the relation between respiration rate, blood oxygen, heart rate, eye movement and sleeping hour with stress level.

2.0 DATASET

The dataset we chose for this project is from Kaggle.com. This dataset contains the sleeping habit of 630 people. The variables included in this dataset are shown in Table 1 below. Next, the conclusion of the selected variables and the test with their respective description are shown in Table 2.

Variable	Data type
Snoring rate	ratio
Respiration rate	ratio
Body temperature	ratio
Limb movement	ratio
Blood oxygen	ratio
Eye movement	ratio
Sleeping hours	ratio
Heart rate	ratio
Stress level	ordinal

Table 1

Test	Selected variable (s)	Description
Hypothesis testing (One sample test)	Eye movement (REM)	**Explanation:** The variable is used to test whether the mean of eye movement exceeds 90 or not at 0.05 of the significance level. **Possible Outcome:** The mean of eye movement is less than 90 at the 0.05 significance level.
Correlation analysis	Respiration rate, blood oxygen	**Explanation:** The variables are chosen to test whether there is a linear relationship between them by using Pearson's Product-Moment Correlation Coefficient at 0.05 of the significance level. **Possible outcome:** There is a strong negative linear relationship exists between these two variables. The higher the respiration rate, the lower

		the blood oxygen.
Regression analysis	Sleeping hour, stress level	**Explanation:** The variables are selected to test whether the stress level can be detected using the sleeping hour variable. The independent (x) variable is the sleeping hour while the dependent (y) variable is the stress level. **Possible outcome:** The stress level is detected using the sleeping hour. The higher the sleeping hour, the lower the stress level.
ANOVA test	Heart rate, stress level	**Explanation:** A random sample is chosen from the dataset to test the equality of the mean of the heart rate for all stress levels by analysing the sample variances at the 0.05 significance level. **Possible outcome:** The different stress levels have a different mean heart rate at the 0.05 significance level.

Table 2

3.0 DATA ANALYSIS

3.1 Hypothesis Testing – 1 sample test

The objective of this test is to determine if there is evidence (with $\alpha = 0.05$) to support the claim that the mean of eye movement (Rapid eye movement, REM) exceeds 90.

Let μ = the mean of eye movement

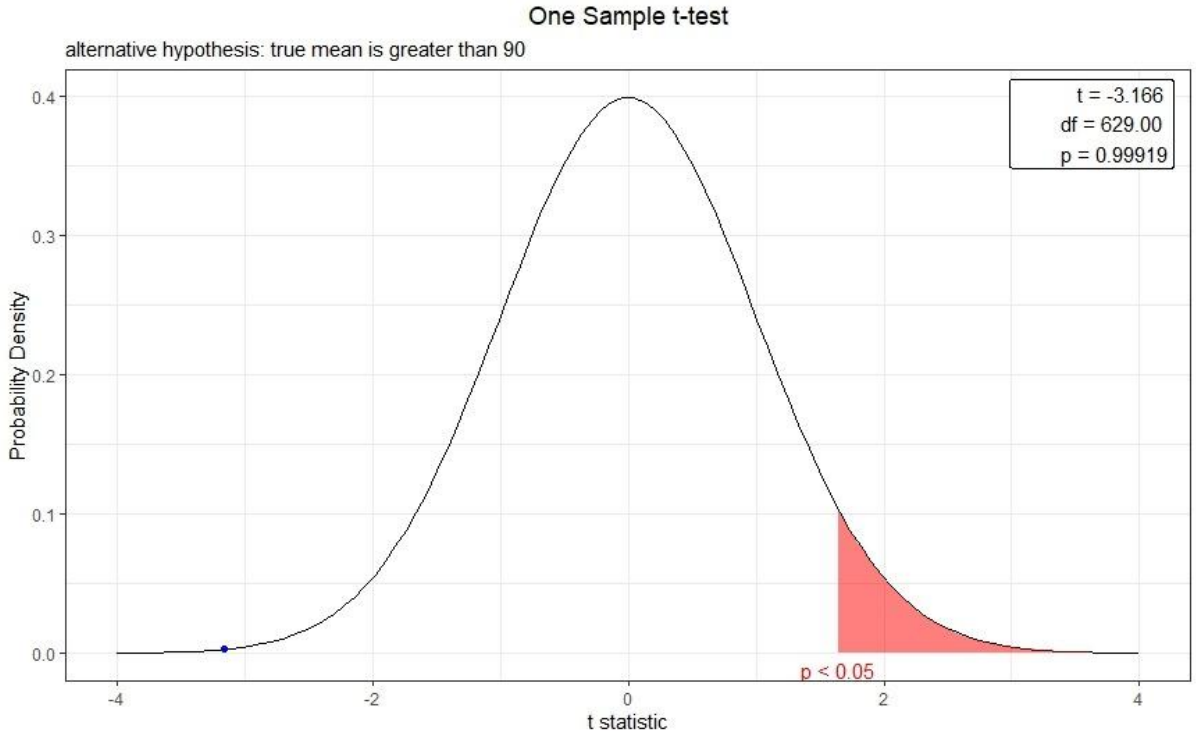
H_0: $\mu = 90$

H_1: $\mu > 90$

Significant level, $\alpha = 0.05$

Since n >30, the Z-test was applied:

$Z_{0.05} = 1.96$



Graph 1: eye movement (REM)

Since the sample size is large and the variance is unknown, we assume that the sample is the normal distribution. Since n > 30, we chose to apply Z-test. The Z-value for this test is obtained by using R. Since this is a one-tailed test, thus the rejection value is located on the right side, $Z_{\text{test statistic}} = -3.166$. Based on graph 1, the red-filled area shows the $Z_{\text{critical value}} = 1.96$ at $\alpha = 0.05$. Since $Z_{\text{test statistic}} = -3.166 < Z_{\text{critical value}} = 1.96$, we fail to reject the null hypothesis, H_0. There is insufficient evidence to claim that the mean of eye movement (Rapid eye movement, REM) exceeds 90.

3.2 Correlation Test

In this correlation analysis, the variables that we used are respiration rate and blood oxygen of 630 people taking part in this experiment. We will test whether there is a linear relationship between respiration rate and blood oxygen using the significance level, $\alpha=0.05$.

Hypothesis statement:

H0: $\rho = 0$ (no linear correlation)

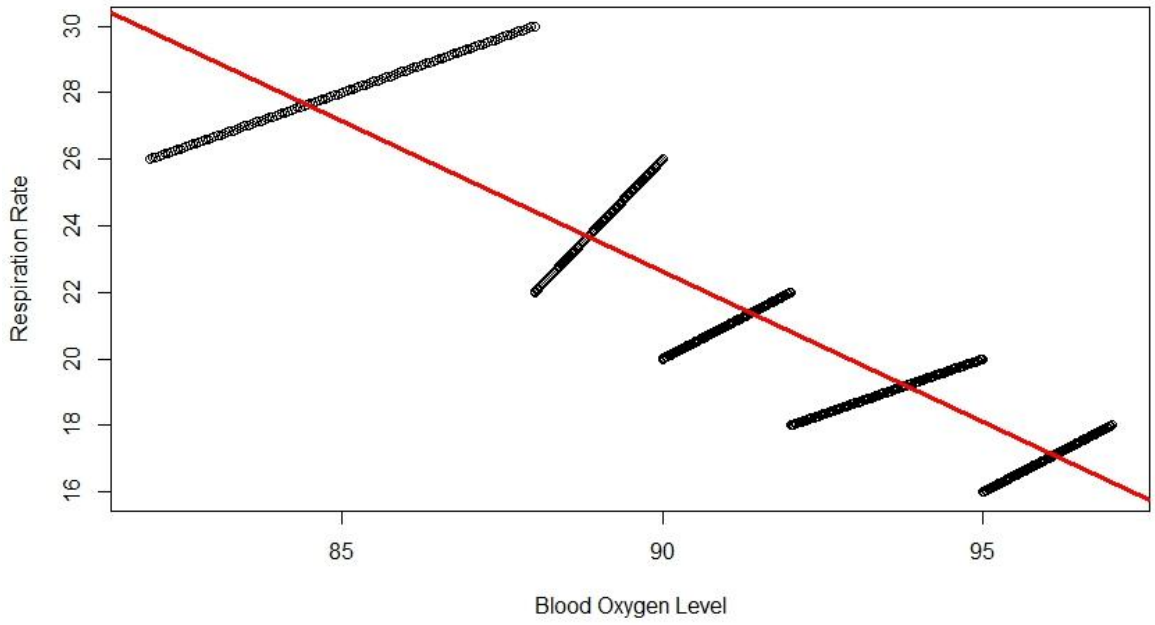
H1: $\rho \neq 0$ (linear correlation exists)

Test statistics:

By using R-Studio, we can get the result that $t = -3.166$ and $t_{0.025,628} = 1.9637$. Thus, the H0 will be rejected if $t < -1.9637$ or $t > 1.9637$. Otherwise, fail to reject H0.

Decision:

Since $t = -3.166 < t_{\text{critical value}}$ -1.9637, we reject the null hypothesis, H0. There is sufficient evidence to conclude that there is a linear relationship between respiration rate and blood oxygen at the 5% level of significance.



Graph 2: Blood oxygen against Respiration rate

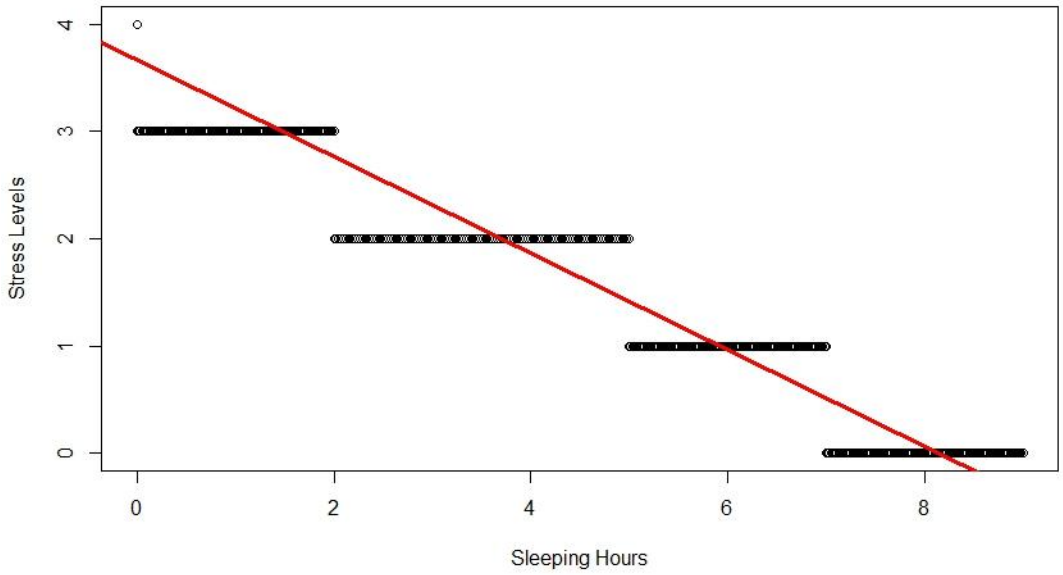
Both of the variables blood oxygen and respiration rate are ratio-type data, the Pearson's product-moment was applied to calculate the correlation coefficient, $r = -0.8892$.

The correlation coefficient indicates that there is a strong negative linear relationship correlation between blood oxygen and respiration rate.

Through the scatter plot constructed, the best fit of the line drawn and the correlation test, it is clearly shown that blood oxygen is correlated to the respiration rate. However, it is a negatively correlated relationship. It means as the respiration rate increase, the blood oxygen level decrease. However, the respiration rate might be affected by a variety of factors such as snoring rate, body temperature, limb movement, eye moment, sleeping hours, heart rate, stress level and so on.

3.3 Regression Test

In this regression test, we used the sleeping hour and stress levels of a random sample of 630 people as the variables to be tested. As we used only one independent variable, the simple linear regression model is used. Through this test, we wanted to find out whether there is a linear relationship between the sleeping hour and the stress of the 630 people. The dependent variable, which is denoted as y, represents the stress level while the independent variable, x represents the sleeping hour.



Graph 3: Stress level against sleeping hour

Based on the scatter plot, we can see that there is a linear relationship between the dependent variable and the independent variable. It can be said that it is a strong negative linear relationship, as the regression line has a negative slope. By using the R-studio, we obtain the value of intersection coefficient, b_0 is 3.6682 and the value of estimated change in the average value of stress level, b_1 is -0.4509. By using these values, we can create an estimated regression and the estimated regression model is as below:

$$\hat{y} = 3.6682 - 0.4509x$$

From the equation, we estimate that the average value of stress level will decrease by 0.4509 for each one-unit change in sleeping hours. When the sleeping hour is zero, the value of b_0 is 3.6682 indicates that for the sample within the range of size observed, 3.6682 is the stress level that is not explained by the sleeping hour.

$$R^2 = \frac{\sum(\hat{y} - \overline{y})^2}{\sum(\mathrm{y} - \overline{y})^2}$$

$$= \frac{1192.9666}{1260}$$

$$= 0.9468$$

Based on the value calculated for the coefficient, R^2 is equal to 0.9468, which shows that there is 94.7% of the variation in stress levels can be explained by the sleeping hour. Hence, we can conclude that the stress level of a person is highly dependent on the length of his or her sleeping hour

3.4 ANOVA Test

By using this ANOVA test, we want to test the equality of the mean of the heart rate for all stress levels by analysing the sample variances. There is 5 different stress level, which is level 0 to level 4 and the sample is randomly selected from the dataset to ensure the sample size is the same. We used the significance level, $\alpha = 0.05$.

Let μ_i = the mean of the heart rate for all stress levels

H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$

H_1: at least one of the means is different

Significance level, $\alpha = 0.05$

Number of samples, n = 10

The mean of samples ($\bar{x}$) and the standard deviation of the samples (s) for each sample are shown in table 3 below:

Heart rate					
	Stress level 0	Stress level 1	Stress level 2	Stress level 3	Stress level 4
$\bar{x}$	52.9680	57.5800	62.2240	70.7520	79.6800
s	1.4781	1.5148	1.8399	2.6644	3.0655

Table 3

Mean between samples ($\bar{\bar{x}}$) = 64.6408

Standard deviation between samples ($s_{\bar{x}}$) = 10.6709

Variance between samples ($ns_{\bar{x}}^2$) = 1138.6811

Variance within (s_p^2) = 4.8690

$$F = \frac{variance\ between\ samples}{variance\ within\ samples} = \frac{ns_{\bar{x}}^{\ 2}}{s_p^{\ 2}}$$

By using the formula above, we can obtain the value of $F_{test\ statistic}$ = 233.8634.

Numerator = k – 1 = 5 – 1 = 4

Denominator = k (n - 1) = 5 (10 - 1) = 45

$F_{critical\ value}$ at $\alpha = 0.05$ = 2.579

Since of $F_{test\ statistic} > F_{critical\ value}$ (233.8634 > 2.579), we reject the null hypothesis, H_0 and conclude that there is sufficient evidence to claim that at least one of the means of the heart rate for different stress levels is different.

4.0 CONCLUSION

In short, there are various factors that can be used to detect the stress level of people, such as heart rate and sleeping hours. Based on the analysis we have done in this project; we conclude that the mean of eye movement (Rapid eye movement, REM) does not exceed 90 during sleeping. After that, from the correlation test, we conclude that a linear negatively correlated relationship between blood oxygen and respiration rate. That means when the respiration rate gets higher, blood oxygen will get lower. Furthermore, by using the regression test, we found that the stress level is highly dependent on the sleeping hours, it is also a negative relationship, as when the sleeping hours increase, the stress level decrease. Lastly, for the ANOVA test, we claim that at least one of the means of the heart rate for different stress levels.

Through this analytical project, we have learned how to use the R studio to analyse datasets, visualise the dataset and explain the dataset in different ways. Furthermore, we also explore how the factors lead to different levels of stress. We also realised that we should not make the conclusion by using our own perspective but in a more professional way which is by analysing the datasets.

Other than that, all the group members contributed to this project hence leading to the success of completing this project. We also learnt how important teamwork is, we distributed the project into several parts to each of the group members and finally discuss the outcome together, even though we confronted some obstacles during the discussion, the problem was solved easily the way of teamwork.

Last thing last, we very much appreciate Dr. Sharin giving full of support during this project. Dr. Sharin explained a lot about the project procedures at the beginning of the project, which facilitated us to proceed with our project efficiently. When we faced problems during the project, Dr. Sharin always respond on time and explain to us patiently. Without assistance from the doctor, we could not complete this project smoothly.

5.0 APPENDIX

5.1 Raw Dataset

snoring range	respiration rate	body temperature	limb movement	blood oxygen	eye movement
93.8	25.68	91.84	16.6	89.84	99.6
91.64	25.104	91.552	15.88	89.552	98.88
60	20	96	10	95	85
85.76	23.536	90.768	13.92	88.768	96.92
48.12	17.248	97.872	6.496	96.248	72.48
56.88	19.376	95.376	9.376	94.064	83.44
47	16.8	97.2	5.6	95.8	68
50	18	99	8	97	80
45.28	16.112	96.168	4.224	95.112	61.12
55.52	19.104	95.104	9.104	93.656	82.76
73.44	21.344	93.344	11.344	91.344	91.72
59.28	19.856	95.856	9.856	94.784	84.64
48.6	17.44	98.16	6.88	96.44	74.4
96.288	26.288	85.36	17.144	82.432	100.36
87.8	24.08	91.04	14.6	89.04	97.6
52.32	18.464	94.464	8.464	92.696	81.16
52.64	18.528	94.528	8.528	92.792	81.32
86.24	23.664	90.832	14.08	88.832	97.08
81.56	22.416	90.208	12.52	88.208	95.52
63.68	20.368	92.368	10.368	90.368	86.84
77.6	21.76	93.76	11.76	91.76	93.8
77.28	21.728	93.728	11.728	91.728	93.64
69.76	20.976	92.976	10.976	90.976	89.88
88.04	24.144	91.072	14.68	89.072	97.68
89.96	24.656	91.328	15.32	89.328	98.32
53.68	18.736	94.736	8.736	93.104	81.84
78.56	21.856	93.856	11.856	91.856	94.28
50.96	18.192	94.192	8.192	92.288	80.48
94.76	25.936	91.968	16.92	89.968	99.92
62.08	20.208	92.208	10.208	90.208	86.04
49.12	17.648	98.472	7.296	96.648	76.48
96.256	26.256	85.32	17.128	82.384	100.32
47.68	17.072	97.608	6.144	96.072	70.72
99.904	29.904	89.88	18.952	87.856	104.88
60	20	92	10	90	85
86.72	23.792	90.896	14.24	88.896	97.24
48.48	17.392	98.088	6.784	96.392	73.92
98.528	28.528	88.16	18.264	85.792	103.16
46.12	16.448	96.672	4.896	95.448	64.48
98.72	28.72	88.4	18.36	86.08	103.4
60.96	20.096	92.096	10.096	90.096	85.48
65.6	20.56	92.56	10.56	90.56	87.8
75.36	21.536	93.536	11.536	91.536	92.68
49.28	17.712	98.568	7.424	96.712	77.12
73.28	21.328	93.328	11.328	91.328	91.64
98.912	28.912	88.64	18.456	86.368	103.64

62.88	20.288	92.288	10.288	90.288	86.44
97.664	27.664	87.08	17.832	84.496	102.08
56.72	19.344	95.344	9.344	94.016	83.36
96.576	26.576	85.72	17.288	82.864	100.72
49.6	17.84	98.76	7.68	96.84	78.4
53.6	18.72	94.72	8.72	93.08	81.8
93.2	25.52	91.76	16.4	89.76	99.4
46.84	16.736	97.104	5.472	95.736	67.36
56.08	19.216	95.216	9.216	93.824	83.04
75.68	21.568	93.568	11.568	91.568	92.84
97.536	27.536	86.92	17.768	84.304	101.92
92.84	25.424	91.712	16.28	89.712	99.28
87.56	24.016	91.008	14.52	89.008	97.52
58.48	19.696	95.696	9.696	94.544	84.24
98.336	28.336	87.92	18.168	85.504	102.92
81.08	22.288	90.144	12.36	88.144	95.36
46.6	16.64	96.96	5.28	95.64	66.4
61.6	20.16	92.16	10.16	90.16	85.8
96.448	26.448	85.56	17.224	82.672	100.56
50.24	18.048	94.048	8.048	92.072	80.12
49.92	17.968	98.952	7.936	96.968	79.68
60.48	20.048	92.048	10.048	90.048	85.24
99.136	29.136	88.92	18.568	86.704	103.92
48.28	17.312	97.968	6.624	96.312	73.12
50.48	18.096	94.096	8.096	92.144	80.24
96.192	26.192	85.24	17.096	82.288	100.24
57.68	19.536	95.536	9.536	94.304	83.84
45.16	16.064	96.096	4.128	95.064	60.64
48.68	17.472	98.208	6.944	96.472	74.72
98.016	28.016	87.52	18.008	85.024	102.52
96.8	26.8	86	17.4	83.2	101
56.48	19.296	95.296	9.296	93.944	83.24
90.08	24.688	91.344	15.36	89.344	98.36
96	26	85	17	82	100
50.64	18.128	94.128	8.128	92.192	80.32
50.56	18.112	94.112	8.112	92.168	80.28
53.92	18.784	94.784	8.784	93.176	81.96
96.672	26.672	85.84	17.336	83.008	100.84
68.32	20.832	92.832	10.832	90.832	89.16
54.88	18.976	94.976	8.976	93.464	82.44
52.4	18.48	94.48	8.48	92.72	81.2
51.6	18.32	94.32	8.32	92.48	80.8
92.48	25.328	91.664	16.16	89.664	99.16
98.24	28.24	87.8	18.12	85.36	102.8
65.12	20.512	92.512	10.512	90.512	87.56
86.6	23.76	90.88	14.2	88.88	97.2
68	20.8	92.8	10.8	90.8	89

99.808	29.808	89.76	18.904	87.712	104.76
45.2	16.08	96.12	4.16	95.08	60.8
63.2	20.32	92.32	10.32	90.32	86.6
98.272	28.272	87.84	18.136	85.408	102.84
75.2	21.52	93.52	11.52	91.52	92.6
76.96	21.696	93.696	11.696	91.696	93.48
80	22	90	12	88	95
99.616	29.616	89.52	18.808	87.424	104.52
97.216	27.216	86.52	17.608	83.824	101.52
45.04	16.016	96.024	4.032	95.016	60.16
97.376	27.376	86.72	17.688	84.064	101.72
53.52	18.704	94.704	8.704	93.056	81.76
61.44	20.144	92.144	10.144	90.144	85.72
62.24	20.224	92.224	10.224	90.224	86.12
79.2	21.92	93.92	11.92	91.92	94.6
96.96	26.96	86.2	17.48	83.44	101.2
54.4	18.88	94.88	8.88	93.32	82.2
68.96	20.896	92.896	10.896	90.896	89.48
96.608	26.608	85.76	17.304	82.912	100.76
47.44	16.976	97.464	5.952	95.976	69.76
90.56	24.816	91.408	15.52	89.408	98.52
66.88	20.688	92.688	10.688	90.688	88.44
97.92	27.92	87.4	17.96	84.88	102.4
68.64	20.864	92.864	10.864	90.864	89.32
76	21.6	93.6	11.6	91.6	93
49.52	17.808	98.712	7.616	96.808	78.08
54.96	18.992	94.992	8.992	93.488	82.48
55.28	19.056	95.056	9.056	93.584	82.64
90.32	24.752	91.376	15.44	89.376	98.44
97.312	27.312	86.64	17.656	83.968	101.64
58.08	19.616	95.616	9.616	94.424	84.04
83.6	22.96	90.48	13.2	88.48	96.2
98.112	28.112	87.64	18.056	85.168	102.64
98.208	28.208	87.76	18.104	85.312	102.76
65.76	20.576	92.576	10.576	90.576	87.88
57.2	19.44	95.44	9.44	94.16	83.6
97.568	27.568	86.96	17.784	84.352	101.96
68.8	20.88	92.88	10.88	90.88	89.4
47.8	17.12	97.68	6.24	96.12	71.2
97.184	27.184	86.48	17.592	83.776	101.48
92.72	25.392	91.696	16.24	89.696	99.24
59.68	19.936	95.936	9.936	94.904	84.84
48.56	17.424	98.136	6.848	96.424	74.24
48.36	17.344	98.016	6.688	96.344	73.44
78.08	21.808	93.808	11.808	91.808	94.04
96.736	26.736	85.92	17.368	83.104	100.92
47.72	17.088	97.632	6.176	96.088	70.88

71.36	21.136	93.136	11.136	91.136	90.68
81.44	22.384	90.192	12.48	88.192	95.48
78.4	21.84	93.84	11.84	91.84	94.2
49.32	17.728	98.592	7.456	96.728	77.28
68.48	20.848	92.848	10.848	90.848	89.24
46.92	16.768	97.152	5.536	95.768	67.68
48.76	17.504	98.256	7.008	96.504	75.04
45.08	16.032	96.048	4.064	95.032	60.32
45.12	16.048	96.072	4.096	95.048	60.48
50.32	18.064	94.064	8.064	92.096	80.16
88.52	24.272	91.136	14.84	89.136	97.84
47.88	17.152	97.728	6.304	96.152	71.52
96.864	26.864	86.08	17.432	83.296	101.08
96.096	26.096	85.12	17.048	82.144	100.12
49	17.6	98.4	7.2	96.6	76
64.64	20.464	92.464	10.464	90.464	87.32
93.32	25.552	91.776	16.44	89.776	99.44
74.56	21.456	93.456	11.456	91.456	92.28
96.32	26.32	85.4	17.16	82.48	100.4
98.784	28.784	88.48	18.392	86.176	103.48
98.88	28.88	88.6	18.44	86.32	103.6
70.56	21.056	93.056	11.056	91.056	90.28
55.76	19.152	95.152	9.152	93.728	82.88
66.08	20.608	92.608	10.608	90.608	88.04
99.392	29.392	89.24	18.696	87.088	104.24
76.8	21.68	93.68	11.68	91.68	93.4
46.8	16.72	97.08	5.44	95.72	67.2
47.28	16.912	97.368	5.824	95.912	69.12
99.776	29.776	89.72	18.888	87.664	104.72
100	30	90	19	88	105
59.6	19.92	95.92	9.92	94.88	84.8
74.72	21.472	93.472	11.472	91.472	92.36
71.2	21.12	93.12	11.12	91.12	90.6
58.16	19.632	95.632	9.632	94.448	84.08
53.44	18.688	94.688	8.688	93.032	81.72
52.56	18.512	94.512	8.512	92.768	81.28
54.32	18.864	94.864	8.864	93.296	82.16
98.08	28.08	87.6	18.04	85.12	102.6
92	25.2	91.6	16	89.6	99
58.88	19.776	95.776	9.776	94.664	84.44
55.2	19.04	95.04	9.04	93.56	82.6
53.36	18.672	94.672	8.672	93.008	81.68
79.04	21.904	93.904	11.904	91.904	94.52
58.24	19.648	95.648	9.648	94.472	84.12
46.2	16.48	96.72	4.96	95.48	64.8
67.04	20.704	92.704	10.704	90.704	88.52
47.04	16.816	97.224	5.632	95.816	68.16

73.76	21.376	93.376	11.376	91.376	91.88
57.04	19.408	95.408	9.408	94.112	83.52
72.48	21.248	93.248	11.248	91.248	91.24
52.8	18.56	94.56	8.56	92.84	81.4
57.28	19.456	95.456	9.456	94.184	83.64
96.384	26.384	85.48	17.192	82.576	100.48
88.4	24.24	91.12	14.8	89.12	97.8
98.304	28.304	87.88	18.152	85.456	102.88
46.68	16.672	97.008	5.344	95.672	66.72
45.96	16.384	96.576	4.768	95.384	63.84
48.64	17.456	98.184	6.912	96.456	74.56
67.36	20.736	92.736	10.736	90.736	88.68
88.76	24.336	91.168	14.92	89.168	97.92
46.36	16.544	96.816	5.088	95.544	65.44
45.44	16.176	96.264	4.352	95.176	61.76
48.84	17.536	98.304	7.072	96.536	75.36
80	22	94	12	92	95
96.64	26.64	85.8	17.32	82.96	100.8
45.32	16.128	96.192	4.256	95.128	61.28
67.68	20.768	92.768	10.768	90.768	88.84
99.552	29.552	89.44	18.776	87.328	104.44
58.32	19.664	95.664	9.664	94.496	84.16
52.08	18.416	94.416	8.416	92.624	81.04
56.56	19.312	95.312	9.312	93.968	83.28
82.28	22.608	90.304	12.76	88.304	95.76
45.48	16.192	96.288	4.384	95.192	61.92
48.72	17.488	98.232	6.976	96.488	74.88
93.08	25.488	91.744	16.36	89.744	99.36
87.44	23.984	90.992	14.48	88.992	97.48
47.4	16.96	97.44	5.92	95.96	69.6
77.76	21.776	93.776	11.776	91.776	93.88
65.28	20.528	92.528	10.528	90.528	87.64
61.76	20.176	92.176	10.176	90.176	85.88
59.36	19.872	95.872	9.872	94.808	84.68
97.088	27.088	86.36	17.544	83.632	101.36
47.2	16.88	97.32	5.76	95.88	68.8
55.68	19.136	95.136	9.136	93.704	82.84
80.12	22.032	90.016	12.04	88.016	95.04
96.768	26.768	85.96	17.384	83.152	100.96
61.12	20.112	92.112	10.112	90.112	85.56
50	18	94	8	92	80
97.408	27.408	86.76	17.704	84.112	101.76
45.52	16.208	96.312	4.416	95.208	62.08
91.4	25.04	91.52	15.8	89.52	98.8
97.056	27.056	86.32	17.528	83.584	101.32
57.44	19.488	95.488	9.488	94.232	83.72
90.44	24.784	91.392	15.48	89.392	98.48

46.76	16.704	97.056	5.408	95.704	67.04
45.84	16.336	96.504	4.672	95.336	63.36
88.64	24.304	91.152	14.88	89.152	97.88
98.048	28.048	87.56	18.024	85.072	102.56
83.12	22.832	90.416	13.04	88.416	96.04
56.64	19.328	95.328	9.328	93.992	83.32
98.176	28.176	87.72	18.088	85.264	102.72
93.44	25.584	91.792	16.48	89.792	99.48
84.44	23.184	90.592	13.48	88.592	96.48
98.432	28.432	88.04	18.216	85.648	103.04
80.96	22.256	90.128	12.32	88.128	95.32
49.08	17.632	98.448	7.264	96.632	76.32
86.96	23.856	90.928	14.32	88.928	97.32
79.36	21.936	93.936	11.936	91.936	94.68
81.2	22.32	90.16	12.4	88.16	95.4
83.96	23.056	90.528	13.32	88.528	96.32
51.36	18.272	94.272	8.272	92.408	80.68
97.248	27.248	86.56	17.624	83.872	101.56
60.16	20.016	92.016	10.016	90.016	85.08
82.76	22.736	90.368	12.92	88.368	95.92
51.12	18.224	94.224	8.224	92.336	80.56
92.96	25.456	91.728	16.32	89.728	99.32
74.88	21.488	93.488	11.488	91.488	92.44
83.48	22.928	90.464	13.16	88.464	96.16
97.632	27.632	87.04	17.816	84.448	102.04
69.44	20.944	92.944	10.944	90.944	89.72
99.872	29.872	89.84	18.936	87.808	104.84
81.92	22.512	90.256	12.64	88.256	95.64
73.12	21.312	93.312	11.312	91.312	91.56
48.88	17.552	98.328	7.104	96.552	75.52
47.12	16.848	97.272	5.696	95.848	68.48
56.16	19.232	95.232	9.232	93.848	83.08
77.44	21.744	93.744	11.744	91.744	93.72
84.8	23.28	90.64	13.6	88.64	96.6
74.4	21.44	93.44	11.44	91.44	92.2
77.92	21.792	93.792	11.792	91.792	93.96
98.848	28.848	88.56	18.424	86.272	103.56
99.04	29.04	88.8	18.52	86.56	103.8
58.56	19.712	95.712	9.712	94.568	84.28
46.64	16.656	96.984	5.312	95.656	66.56
98.656	28.656	88.32	18.328	85.984	103.32
51.92	18.384	94.384	8.384	92.576	80.96
70.08	21.008	93.008	11.008	91.008	90.04
89.48	24.528	91.264	15.16	89.264	98.16
96.928	26.928	86.16	17.464	83.392	101.16
89.36	24.496	91.248	15.12	89.248	98.12
94.28	25.808	91.904	16.76	89.904	99.76

83.36	22.896	90.448	13.12	88.448	96.12
45.36	16.144	96.216	4.288	95.144	61.44
94.88	25.968	91.984	16.96	89.984	99.96
47.24	16.896	97.344	5.792	95.896	68.96
54.56	18.912	94.912	8.912	93.368	82.28
89.84	24.624	91.312	15.28	89.312	98.28
89	24.4	91.2	15	89.2	98
88.28	24.208	91.104	14.76	89.104	97.76
64.32	20.432	92.432	10.432	90.432	87.16
96.48	26.48	85.6	17.24	82.72	100.6
48.24	17.296	97.944	6.592	96.296	72.96
97.344	27.344	86.68	17.672	84.016	101.68
45.88	16.352	96.528	4.704	95.352	63.52
98.368	28.368	87.96	18.184	85.552	102.96
49.68	17.872	98.808	7.744	96.872	78.72
69.12	20.912	92.912	10.912	90.912	89.56
59.52	19.904	95.904	9.904	94.856	84.76
76.48	21.648	93.648	11.648	91.648	93.24
53.12	18.624	94.624	8.624	92.936	81.56
86.36	23.696	90.848	14.12	88.848	97.12
49.36	17.744	98.616	7.488	96.744	77.44
46	16.4	96.6	4.8	95.4	64
91.76	25.136	91.568	15.92	89.568	98.92
65.92	20.592	92.592	10.592	90.592	87.96
62.56	20.256	92.256	10.256	90.256	86.28
96.704	26.704	85.88	17.352	83.056	100.88
72.32	21.232	93.232	11.232	91.232	91.16
90.92	24.912	91.456	15.64	89.456	98.64
48.8	17.52	98.28	7.04	96.52	75.2
85.04	23.344	90.672	13.68	88.672	96.68
71.04	21.104	93.104	11.104	91.104	90.52
55.92	19.184	95.184	9.184	93.776	82.96
45.56	16.224	96.336	4.448	95.224	62.24
56.8	19.36	95.36	9.36	94.04	83.4
49.8	17.92	98.88	7.84	96.92	79.2
95	26	92	17	90	100
87.2	23.92	90.96	14.4	88.96	97.4
82.52	22.672	90.336	12.84	88.336	95.84
48	17.2	97.8	6.4	96.2	72
91.16	24.976	91.488	15.72	89.488	98.72
96.032	26.032	85.04	17.016	82.048	100.04
71.52	21.152	93.152	11.152	91.152	90.76
96.064	26.064	85.08	17.032	82.096	100.08
89.6	24.56	91.28	15.2	89.28	98.2
99.68	29.68	89.6	18.84	87.52	104.6
57.6	19.52	95.52	9.52	94.28	83.8
70.72	21.072	93.072	11.072	91.072	90.36

49.4	17.76	98.64	7.52	96.76	77.6
74.08	21.408	93.408	11.408	91.408	92.04
96.992	26.992	86.24	17.496	83.488	101.24
49.2	17.68	98.52	7.36	96.68	76.8
51.04	18.208	94.208	8.208	92.312	80.52
84.68	23.248	90.624	13.56	88.624	96.56
98.464	28.464	88.08	18.232	85.696	103.08
46.24	16.496	96.744	4.992	95.496	64.96
50.72	18.144	94.144	8.144	92.216	80.36
47.52	17.008	97.512	6.016	96.008	70.08
47.08	16.832	97.248	5.664	95.832	68.32
89.12	24.432	91.216	15.04	89.216	98.04
45.6	16.24	96.36	4.48	95.24	62.4
45.68	16.272	96.408	4.544	95.272	62.72
64.16	20.416	92.416	10.416	90.416	87.08
92.12	25.232	91.616	16.04	89.616	99.04
72.64	21.264	93.264	11.264	91.264	91.32
97.28	27.28	86.6	17.64	83.92	101.6
49.56	17.824	98.736	7.648	96.824	78.24
59.44	19.888	95.888	9.888	94.832	84.72
92.36	25.296	91.648	16.12	89.648	99.12
97.44	27.44	86.8	17.72	84.16	101.8
80.72	22.192	90.096	12.24	88.096	95.24
99.936	29.936	89.92	18.968	87.904	104.92
99.168	29.168	88.96	18.584	86.752	103.96
85.16	23.376	90.688	13.72	88.688	96.72
97.696	27.696	87.12	17.848	84.544	102.12
75.84	21.584	93.584	11.584	91.584	92.92
45	16	96	4	95	60
98.496	28.496	88.12	18.248	85.744	103.12
64	20.4	92.4	10.4	90.4	87
81.32	22.352	90.176	12.44	88.176	95.44
75.52	21.552	93.552	11.552	91.552	92.76
52	18.4	94.4	8.4	92.6	81
66.4	20.64	92.64	10.64	90.64	88.2
71.84	21.184	93.184	11.184	91.184	90.92
99.072	29.072	88.84	18.536	86.608	103.84
49.24	17.696	98.544	7.392	96.696	76.96
86.48	23.728	90.864	14.16	88.864	97.16
46.04	16.416	96.624	4.832	95.416	64.16
58.96	19.792	95.792	9.792	94.688	84.48
92.24	25.264	91.632	16.08	89.632	99.08
97.472	27.472	86.84	17.736	84.208	101.84
93.92	25.712	91.856	16.64	89.856	99.64
67.84	20.784	92.784	10.784	90.784	88.92
46.28	16.512	96.768	5.024	95.512	65.12
90.2	24.72	91.36	15.4	89.36	98.4

50.4	18.08	94.08	8.08	92.12	80.2
70.88	21.088	93.088	11.088	91.088	90.44
97.792	27.792	87.24	17.896	84.688	102.24
47.96	17.184	97.776	6.368	96.184	71.84
56.24	19.248	95.248	9.248	93.872	83.12
96.16	26.16	85.2	17.08	82.24	100.2
55.12	19.024	95.024	9.024	93.536	82.56
61.92	20.192	92.192	10.192	90.192	85.96
48.08	17.232	97.848	6.464	96.232	72.32
84.32	23.152	90.576	13.44	88.576	96.44
47.32	16.928	97.392	5.856	95.928	69.28
53.04	18.608	94.608	8.608	92.912	81.52
57.12	19.424	95.424	9.424	94.136	83.56
84.92	23.312	90.656	13.64	88.656	96.64
55.04	19.008	95.008	9.008	93.512	82.52
99.968	29.968	89.96	18.984	87.952	104.96
57.92	19.584	95.584	9.584	94.376	83.96
96.896	26.896	86.12	17.448	83.344	101.12
50.8	18.16	94.16	8.16	92.24	80.4
98.56	28.56	88.2	18.28	85.84	103.2
51.84	18.368	94.368	8.368	92.552	80.92
49.72	17.888	98.832	7.776	96.888	78.88
83.84	23.024	90.512	13.28	88.512	96.28
86.84	23.824	90.912	14.28	88.912	97.28
85.4	23.44	90.72	13.8	88.72	96.8
80.36	22.096	90.048	12.12	88.048	95.12
85.64	23.504	90.752	13.88	88.752	96.88
96.512	26.512	85.64	17.256	82.768	100.64
78.72	21.872	93.872	11.872	91.872	94.36
62.72	20.272	92.272	10.272	90.272	86.36
84.2	23.12	90.56	13.4	88.56	96.4
56.4	19.28	95.28	9.28	93.92	83.2
83.24	22.864	90.432	13.08	88.432	96.08
90.68	24.848	91.424	15.56	89.424	98.56
76.16	21.616	93.616	11.616	91.616	93.08
48.2	17.28	97.92	6.56	96.28	72.8
97.856	27.856	87.32	17.928	84.784	102.32
98.688	28.688	88.36	18.344	86.032	103.36
52.24	18.448	94.448	8.448	92.672	81.12
50.16	18.032	94.032	8.032	92.048	80.08
45.72	16.288	96.432	4.576	95.288	62.88
59.12	19.824	95.824	9.824	94.736	84.56
97.152	27.152	86.44	17.576	83.728	101.44
81.8	22.48	90.24	12.6	88.24	95.6
49.88	17.952	98.928	7.904	96.952	79.52
52.16	18.432	94.432	8.432	92.648	81.08
98.624	28.624	88.28	18.312	85.936	103.28

98.4	28.4	88	18.2	85.6	103
47.84	17.136	97.704	6.272	96.136	71.36
48.52	17.408	98.112	6.816	96.408	74.08
56	19.2	95.2	9.2	93.8	83
58.72	19.744	95.744	9.744	94.616	84.36
48.04	17.216	97.824	6.432	96.216	72.16
99.744	29.744	89.68	18.872	87.616	104.68
47.36	16.944	97.416	5.888	95.944	69.44
97.824	27.824	87.28	17.912	84.736	102.28
66.56	20.656	92.656	10.656	90.656	88.28
49.84	17.936	98.904	7.872	96.936	79.36
72.16	21.216	93.216	11.216	91.216	91.08
84.08	23.088	90.544	13.36	88.544	96.36
72.8	21.28	93.28	11.28	91.28	91.4
77.12	21.712	93.712	11.712	91.712	93.56
99.456	29.456	89.32	18.728	87.184	104.32
88.16	24.176	91.088	14.72	89.088	97.72
52.88	18.576	94.576	8.576	92.864	81.44
97.888	27.888	87.36	17.944	84.832	102.36
54.08	18.816	94.816	8.816	93.224	82.04
57.36	19.472	95.472	9.472	94.208	83.68
51.2	18.24	94.24	8.24	92.36	80.6
63.36	20.336	92.336	10.336	90.336	86.68
97.984	27.984	87.48	17.992	84.976	102.48
98.752	28.752	88.44	18.376	86.128	103.44
82.4	22.64	90.32	12.8	88.32	95.8
66.24	20.624	92.624	10.624	90.624	88.12
49.76	17.904	98.856	7.808	96.904	79.04
59.84	19.968	95.968	9.968	94.952	84.92
87.92	24.112	91.056	14.64	89.056	97.64
52.48	18.496	94.496	8.496	92.744	81.24
87.32	23.952	90.976	14.44	88.976	97.44
55.44	19.088	95.088	9.088	93.632	82.72
52.96	18.592	94.592	8.592	92.888	81.48
54.24	18.848	94.848	8.848	93.272	82.12
53.76	18.752	94.752	8.752	93.128	81.88
99.584	29.584	89.48	18.792	87.376	104.48
78.88	21.888	93.888	11.888	91.888	94.44
97.952	27.952	87.44	17.976	84.928	102.44
57.52	19.504	95.504	9.504	94.256	83.76
99.712	29.712	89.64	18.856	87.568	104.64
60.8	20.08	92.08	10.08	90.08	85.4
69.92	20.992	92.992	10.992	90.992	89.96
51.52	18.304	94.304	8.304	92.456	80.76
91.28	25.008	91.504	15.76	89.504	98.76
86.12	23.632	90.816	14.04	88.816	97.04
76.32	21.632	93.632	11.632	91.632	93.16

56.32	19.264	95.264	9.264	93.896	83.16
45.4	16.16	96.24	4.32	95.16	61.6
48.92	17.568	98.352	7.136	96.568	75.68
94.16	25.776	91.888	16.72	89.888	99.72
51.76	18.352	94.352	8.352	92.528	80.88
45.92	16.368	96.552	4.736	95.368	63.68
91.04	24.944	91.472	15.68	89.472	98.68
54.8	18.96	94.96	8.96	93.44	82.4
49.96	17.984	98.976	7.968	96.984	79.84
51.28	18.256	94.256	8.256	92.384	80.64
99.36	29.36	89.2	18.68	87.04	104.2
47.76	17.104	97.656	6.208	96.104	71.04
46.96	16.784	97.176	5.568	95.784	67.84
92.6	25.36	91.68	16.2	89.68	99.2
68.16	20.816	92.816	10.816	90.816	89.08
61.28	20.128	92.128	10.128	90.128	85.64
96.832	26.832	86.04	17.416	83.248	101.04
52.72	18.544	94.544	8.544	92.816	81.36
82.16	22.576	90.288	12.72	88.288	95.72
63.04	20.304	92.304	10.304	90.304	86.52
99.232	29.232	89.04	18.616	86.848	104.04
63.84	20.384	92.384	10.384	90.384	86.92
99.424	29.424	89.28	18.712	87.136	104.28
60.64	20.064	92.064	10.064	90.064	85.32
59.2	19.84	95.84	9.84	94.76	84.6
89.72	24.592	91.296	15.24	89.296	98.24
46.56	16.624	96.936	5.248	95.624	66.24
50.08	18.016	94.016	8.016	92.024	80.04
49.16	17.664	98.496	7.328	96.664	76.64
46.88	16.752	97.128	5.504	95.752	67.52
83.72	22.992	90.496	13.24	88.496	96.24
63.52	20.352	92.352	10.352	90.352	86.76
96.128	26.128	85.16	17.064	82.192	100.16
80.48	22.128	90.064	12.16	88.064	95.16
45.8	16.32	96.48	4.64	95.32	63.2
47.16	16.864	97.296	5.728	95.864	68.64
99.264	29.264	89.08	18.632	86.896	104.08
60.32	20.032	92.032	10.032	90.032	85.16
96.224	26.224	85.28	17.112	82.336	100.28
99.008	29.008	88.76	18.504	86.512	103.76
50.88	18.176	94.176	8.176	92.264	80.44
78.24	21.824	93.824	11.824	91.824	94.12
89.24	24.464	91.232	15.08	89.232	98.08
47.92	17.168	97.752	6.336	96.168	71.68
51.68	18.336	94.336	8.336	92.504	80.84
46.48	16.592	96.888	5.184	95.592	65.92
82.04	22.544	90.272	12.68	88.272	95.68

49.64	17.856	98.784	7.712	96.856	78.56
46.72	16.688	97.032	5.376	95.688	66.88
67.52	20.752	92.752	10.752	90.752	88.76
53.28	18.656	94.656	8.656	92.984	81.64
45.76	16.304	96.456	4.608	95.304	63.04
46.4	16.56	96.84	5.12	95.56	65.6
99.52	29.52	89.4	18.76	87.28	104.4
46.44	16.576	96.864	5.152	95.576	65.76
99.2	29.2	89	18.6	86.8	104
53.84	18.768	94.768	8.768	93.152	81.92
79.52	21.952	93.952	11.952	91.952	94.76
96.544	26.544	85.68	17.272	82.816	100.68
80.6	22.16	90.08	12.2	88.08	95.2
79.68	21.968	93.968	11.968	91.968	94.84
98.944	28.944	88.68	18.472	86.416	103.68
47.6	17.04	97.56	6.08	96.04	70.4
81.68	22.448	90.224	12.56	88.224	95.56
59.92	19.984	95.984	9.984	94.976	84.96
48.96	17.584	98.376	7.168	96.584	75.84
48.16	17.264	97.896	6.528	96.264	72.64
58.4	19.68	95.68	9.68	94.52	84.2
97.728	27.728	87.16	17.864	84.592	102.16
70.24	21.024	93.024	11.024	91.024	90.12
85.28	23.408	90.704	13.76	88.704	96.76
46.32	16.528	96.792	5.056	95.528	65.28
54.48	18.896	94.896	8.896	93.344	82.24
87.68	24.048	91.024	14.56	89.024	97.56
99.296	29.296	89.12	18.648	86.944	104.12
80.24	22.064	90.032	12.08	88.032	95.08
98.816	28.816	88.52	18.408	86.224	103.52
64.48	20.448	92.448	10.448	90.448	87.24
99.648	29.648	89.56	18.824	87.472	104.56
64.96	20.496	92.496	10.496	90.496	87.48
82.64	22.704	90.352	12.88	88.352	95.88
46.52	16.608	96.912	5.216	95.608	66.08
91.88	25.168	91.584	15.96	89.584	98.96
64.8	20.48	92.48	10.48	90.48	87.4
49.04	17.616	98.424	7.232	96.616	76.16
75.04	21.504	93.504	11.504	91.504	92.52
87.08	23.888	90.944	14.36	88.944	97.36
76.64	21.664	93.664	11.664	91.664	93.32
85.88	23.568	90.784	13.96	88.784	96.96
99.488	29.488	89.36	18.744	87.232	104.36
51.44	18.288	94.288	8.288	92.432	80.72
58	19.6	95.6	9.6	94.4	84
49.48	17.792	98.688	7.584	96.792	77.92
70.4	21.04	93.04	11.04	91.04	90.2

72.96	21.296	93.296	11.296	91.296	91.48
94.4	25.84	91.92	16.8	89.92	99.8
54.72	18.944	94.944	8.944	93.416	82.36
80.84	22.224	90.112	12.28	88.112	95.28
94.64	25.904	91.952	16.88	89.952	99.88
91.52	25.072	91.536	15.84	89.536	98.84
97.6	27.6	87	17.8	84.4	102
99.84	29.84	89.8	18.92	87.76	104.8
85.52	23.472	90.736	13.84	88.736	96.84
54.16	18.832	94.832	8.832	93.248	82.08
55.36	19.072	95.072	9.072	93.608	82.68
46.16	16.464	96.696	4.928	95.464	64.64
96.416	26.416	85.52	17.208	82.624	100.52
86	23.6	90.8	14	88.8	97
79.84	21.984	93.984	11.984	91.984	94.92
90.8	24.88	91.44	15.6	89.44	98.6
96.352	26.352	85.44	17.176	82.528	100.44
55.6	19.12	95.12	9.12	93.68	82.8
72	21.2	93.2	11.2	91.2	91
84.56	23.216	90.608	13.52	88.608	96.52
59.76	19.952	95.952	9.952	94.928	84.88
83	22.8	90.4	13	88.4	96
74.24	21.424	93.424	11.424	91.424	92.12
45.24	16.096	96.144	4.192	95.096	60.96
49.44	17.776	98.664	7.552	96.776	77.76
66.72	20.672	92.672	10.672	90.672	88.36
54	18.8	94.8	8.8	93.2	82
94.52	25.872	91.936	16.84	89.936	99.84
47.56	17.024	97.536	6.048	96.024	70.24
47.64	17.056	97.584	6.112	96.056	70.56
47.48	16.992	97.488	5.984	95.992	69.92
97.12	27.12	86.4	17.56	83.68	101.4
69.28	20.928	92.928	10.928	90.928	89.64
98.976	28.976	88.72	18.488	86.464	103.72
45.64	16.256	96.384	4.512	95.256	62.56
99.104	29.104	88.88	18.552	86.656	103.88
99.328	29.328	89.16	18.664	86.992	104.16
93.56	25.616	91.808	16.52	89.808	99.52
57.76	19.552	95.552	9.552	94.328	83.88
56.96	19.392	95.392	9.392	94.088	83.48
55.84	19.168	95.168	9.168	93.752	82.92
48.32	17.328	97.992	6.656	96.328	73.28
94.04	25.744	91.872	16.68	89.872	99.68
97.76	27.76	87.2	17.88	84.64	102.2
67.2	20.72	92.72	10.72	90.72	88.6
57.84	19.568	95.568	9.568	94.352	83.92
54.64	18.928	94.928	8.928	93.392	82.32

93.68	25.648	91.824	16.56	89.824	99.56
98.592	28.592	88.24	18.296	85.888	103.24
88.88	24.368	91.184	14.96	89.184	97.96
73.6	21.36	93.36	11.36	91.36	91.8
62.4	20.24	92.24	10.24	90.24	86.2
82.88	22.768	90.384	12.96	88.384	95.96
59.04	19.808	95.808	9.808	94.712	84.52
71.68	21.168	93.168	11.168	91.168	90.84
48.4	17.36	98.04	6.72	96.36	73.6
46.08	16.432	96.648	4.864	95.432	64.32
97.024	27.024	86.28	17.512	83.536	101.28
53.2	18.64	94.64	8.64	92.96	81.6
65.44	20.544	92.544	10.544	90.544	87.72
98.144	28.144	87.68	18.072	85.216	102.68
58.8	19.76	95.76	9.76	94.64	84.4
69.6	20.96	92.96	10.96	90.96	89.8
48.44	17.376	98.064	6.752	96.376	73.76
97.504	27.504	86.88	17.752	84.256	101.88
58.64	19.728	95.728	9.728	94.592	84.32
73.92	21.392	93.392	11.392	91.392	91.96
45108					

sleeping hours	heart rate	Stress level
1.84	74.2	3
1.552	72.76	3
7	60	1
0.768	68.84	3
8.248	53.12	0
6.376	58.44	1
7.8	52	0
9	55	0
7.112	50.28	0
6.104	57.76	1
4.016	63.36	2
6.856	59.64	1
8.44	53.6	0
0	75.72	4
1.04	70.2	3
5.464	56.16	1
5.528	56.32	1
0.832	69.16	3
0.208	66.04	3
2.552	60.92	2
4.64	64.4	2
4.592	64.32	2
3.464	62.44	2
1.072	70.36	3
1.328	71.64	3
5.736	56.84	1
4.784	64.64	2
5.192	55.48	1
1.968	74.84	3
2.312	60.52	2
8.648	54.12	0
0	75.64	4
8.072	52.68	0
0	84.76	4
2	60	2
0.896	69.48	3
8.392	53.48	0
0	81.32	4
7.448	51.12	0
0	81.8	4
2.144	60.24	2
2.84	61.4	2
4.304	63.84	2
8.712	54.28	0
3.992	63.32	2
0	82.28	4

2.432	60.72	2
0	79.16	4
6.344	58.36	1
0	76.44	4
8.84	54.6	0
5.72	56.8	1
1.76	73.8	3
7.736	51.84	0
6.216	58.04	1
4.352	63.92	2
0	78.84	4
1.712	73.56	3
1.008	70.04	3
6.696	59.24	1
0	80.84	4
0.144	65.72	3
7.64	51.6	0
2.24	60.4	2
0	76.12	4
5.048	55.12	1
8.968	54.92	0
2.072	60.12	2
0	82.84	4
8.312	53.28	0
5.096	55.24	1
0	75.48	4
6.536	58.84	1
7.064	50.16	0
8.472	53.68	0
0	80.04	4
0	77	4
6.296	58.24	1
1.344	71.72	3
0	75	4
5.128	55.32	1
5.112	55.28	1
5.784	56.96	1
0	76.68	4
3.248	62.08	2
5.976	57.44	1
5.48	56.2	1
5.32	55.8	1
1.664	73.32	3
0	80.6	4
2.768	61.28	2
0.88	69.4	3
3.2	62	2

0	84.52	4
7.08	50.2	0
2.48	60.8	2
0	80.68	4
4.28	63.8	2
4.544	64.24	2
0	65	3
0	84.04	4
0	78.04	4
7.016	50.04	0
0	78.44	4
5.704	56.76	1
2.216	60.36	2
2.336	60.56	2
4.88	64.8	2
0	77.4	4
5.88	57.2	1
3.344	62.24	2
0	76.52	4
7.976	52.44	0
1.408	72.04	3
3.032	61.72	2
0	79.8	4
3.296	62.16	2
4.4	64	2
8.808	54.52	0
5.992	57.48	1
6.056	57.64	1
1.376	71.88	3
0	78.28	4
6.616	59.04	1
0.48	67.4	3
0	80.28	4
0	80.52	4
2.864	61.44	2
6.44	58.6	1
0	78.92	4
3.32	62.2	2
8.12	52.8	0
0	77.96	4
1.696	73.48	3
6.936	59.84	1
8.424	53.56	0
8.344	53.36	0
4.712	64.52	2
0	76.84	4
8.088	52.72	0

3.704	62.84	2
0.192	65.96	3
4.76	64.6	2
8.728	54.32	0
3.272	62.12	2
7.768	51.92	0
8.504	53.76	0
7.032	50.08	0
7.048	50.12	0
5.064	55.16	1
1.136	70.68	3
8.152	52.88	0
0	77.16	4
0	75.24	4
8.6	54	0
2.696	61.16	2
1.776	73.88	3
4.184	63.64	2
0	75.8	4
0	81.96	4
0	82.2	4
3.584	62.64	2
6.152	57.88	1
2.912	61.52	2
0	83.48	4
4.52	64.2	2
7.72	51.8	0
7.912	52.28	0
0	84.44	4
0	85	4
6.92	59.8	1
4.208	63.68	2
3.68	62.8	2
6.632	59.08	1
5.688	56.72	1
5.512	56.28	1
5.864	57.16	1
0	80.2	4
1.6	73	3
6.776	59.44	1
6.04	57.6	1
5.672	56.68	1
4.856	64.76	2
6.648	59.12	1
7.48	51.2	0
3.056	61.76	2
7.816	52.04	0

4.064	63.44	2
6.408	58.52	1
3.872	63.12	2
5.56	56.4	1
6.456	58.64	1
0	75.96	4
1.12	70.6	3
0	80.76	4
7.672	51.68	0
7.384	50.96	0
8.456	53.64	0
3.104	61.84	2
1.168	70.84	3
7.544	51.36	0
7.176	50.44	0
8.536	53.84	0
5	65	2
0	76.6	4
7.128	50.32	0
3.152	61.92	2
0	83.88	4
6.664	59.16	1
5.416	56.04	1
6.312	58.28	1
0.304	66.52	3
7.192	50.48	0
8.488	53.72	0
1.744	73.72	3
0.992	69.96	3
7.96	52.4	0
4.664	64.44	2
2.792	61.32	2
2.264	60.44	2
6.872	59.68	1
0	77.72	4
7.88	52.2	0
6.136	57.84	1
0.016	65.08	3
0	76.92	4
2.168	60.28	2
5	55	1
0	78.52	4
7.208	50.52	0
1.52	72.6	3
0	77.64	4
6.488	58.72	1
1.392	71.96	3

7.704	51.76	0
7.336	50.84	0
1.152	70.76	3
0	80.12	4
0.416	67.08	3
6.328	58.32	1
0	80.44	4
1.792	73.96	3
0.592	67.96	3
0	81.08	4
0.128	65.64	3
8.632	54.08	0
0.928	69.64	3
4.904	64.84	2
0.16	65.8	3
0.528	67.64	3
5.272	55.68	1
0	78.12	4
2.024	60.04	2
0.368	66.84	3
5.224	55.56	1
1.728	73.64	3
4.232	63.72	2
0.464	67.32	3
0	79.08	4
3.416	62.36	2
0	84.68	4
0.256	66.28	3
3.968	63.28	2
8.552	53.88	0
7.848	52.12	0
6.232	58.08	1
4.616	64.36	2
0.64	68.2	3
4.16	63.6	2
4.688	64.48	2
0	82.12	4
0	82.6	4
6.712	59.28	1
7.656	51.64	0
0	81.64	4
5.384	55.96	1
3.512	62.52	2
1.264	71.32	3
0	77.32	4
1.248	71.24	3
1.904	74.52	3

0.448	67.24	3
7.144	50.36	0
1.984	74.92	3
7.896	52.24	0
5.912	57.28	1
1.312	71.56	3
1.2	71	3
1.104	70.52	3
2.648	61.08	2
0	76.2	4
8.296	53.24	0
0	78.36	4
7.352	50.88	0
0	80.92	4
8.872	54.68	0
3.368	62.28	2
6.904	59.76	1
4.472	64.12	2
5.624	56.56	1
0.848	69.24	3
8.744	54.36	0
7.4	51	0
1.568	72.84	3
2.888	61.48	2
2.384	60.64	2
0	76.76	4
3.848	63.08	2
1.456	72.28	3
8.52	53.8	0
0.672	68.36	3
3.656	62.76	2
6.184	57.96	1
7.224	50.56	0
6.36	58.4	1
8.92	54.8	0
2	75	3
0.96	69.8	3
0.336	66.68	3
8.2	53	0
1.488	72.44	3
0	75.08	4
3.728	62.88	2
0	75.16	4
1.28	71.4	3
0	84.2	4
6.52	58.8	1
3.608	62.68	2

8.76	54.4	0
4.112	63.52	2
0	77.48	4
8.68	54.2	0
5.208	55.52	1
0.624	68.12	3
0	81.16	4
7.496	51.24	0
5.144	55.36	1
8.008	52.52	0
7.832	52.08	0
1.216	71.08	3
7.24	50.6	0
7.272	50.68	0
2.624	61.04	2
1.616	73.08	3
3.896	63.16	2
0	78.2	4
8.824	54.56	0
6.888	59.72	1
1.648	73.24	3
0	78.6	4
0.096	65.48	3
0	84.84	4
0	82.92	4
0.688	68.44	3
0	79.24	4
4.376	63.96	2
7	50	0
0	81.24	4
2.6	61	2
0.176	65.88	3
4.328	63.88	2
5.4	56	1
2.96	61.6	2
3.776	62.96	2
0	82.68	4
8.696	54.24	0
0.864	69.32	3
7.416	51.04	0
6.792	59.48	1
1.632	73.16	3
0	78.68	4
1.856	74.28	3
3.176	61.96	2
7.512	51.28	0
1.36	71.8	3

5.08	55.2	1
3.632	62.72	2
0	79.48	4
8.184	52.96	0
6.248	58.12	1
0	75.4	4
6.024	57.56	1
2.288	60.48	2
8.232	53.08	0
0.576	67.88	3
7.928	52.32	0
5.608	56.52	1
6.424	58.56	1
0.656	68.28	3
6.008	57.52	1
0	84.92	4
6.584	58.96	1
0	77.24	4
5.16	55.4	1
0	81.4	4
5.368	55.92	1
8.888	54.72	0
0.512	67.56	3
0.912	69.56	3
0.72	68.6	3
0.048	65.24	3
0.752	68.76	3
0	76.28	4
4.808	64.68	2
2.408	60.68	2
0.56	67.8	3
6.28	58.2	1
0.432	67.16	3
1.424	72.12	3
4.424	64.04	2
8.28	53.2	0
0	79.64	4
0	81.72	4
5.448	56.12	1
5.032	55.08	1
7.288	50.72	0
6.824	59.56	1
0	77.88	4
0.24	66.2	3
8.952	54.88	0
5.432	56.08	1
0	81.56	4

0	81	4
8.136	52.84	0
8.408	53.52	0
6.2	58	1
6.744	59.36	1
8.216	53.04	0
0	84.36	4
7.944	52.36	0
0	79.56	4
2.984	61.64	2
8.936	54.84	0
3.824	63.04	2
0.544	67.72	3
3.92	63.2	2
4.568	64.28	2
0	83.64	4
1.088	70.44	3
5.576	56.44	1
0	79.72	4
5.816	57.04	1
6.472	58.68	1
5.24	55.6	1
2.504	60.84	2
0	79.96	4
0	81.88	4
0.32	66.6	3
2.936	61.56	2
8.904	54.76	0
6.968	59.92	1
1.056	70.28	3
5.496	56.24	1
0.976	69.88	3
6.088	57.72	1
5.592	56.48	1
5.848	57.12	1
5.752	56.88	1
0	83.96	4
4.832	64.72	2
0	79.88	4
6.504	58.76	1
0	84.28	4
2.12	60.2	2
3.488	62.48	2
5.304	55.76	1
1.504	72.52	3
0.816	69.08	3
4.448	64.08	2

6.264	58.16	1
7.16	50.4	0
8.568	53.92	0
1.888	74.44	3
5.352	55.88	1
7.368	50.92	0
1.472	72.36	3
5.96	57.4	1
8.984	54.96	0
5.256	55.64	1
0	83.4	4
8.104	52.76	0
7.784	51.96	0
1.68	73.4	3
3.224	62.04	2
2.192	60.32	2
0	77.08	4
5.544	56.36	1
0.288	66.44	3
2.456	60.76	2
0	83.08	4
2.576	60.96	2
0	83.56	4
2.096	60.16	2
6.84	59.6	1
1.296	71.48	3
7.624	51.56	0
5.016	55.04	1
8.664	54.16	0
7.752	51.88	0
0.496	67.48	3
2.528	60.88	2
0	75.32	4
0.064	65.32	3
7.32	50.8	0
7.864	52.16	0
0	83.16	4
2.048	60.08	2
0	75.56	4
0	82.52	4
5.176	55.44	1
4.736	64.56	2
1.232	71.16	3
8.168	52.92	0
5.336	55.84	1
7.592	51.48	0
0.272	66.36	3

8.856	54.64	0
7.688	51.72	0
3.128	61.88	2
5.656	56.64	1
7.304	50.76	0
7.56	51.4	0
0	83.8	4
7.576	51.44	0
0	83	4
5.768	56.92	1
4.928	64.88	2
0	76.36	4
0.08	65.4	3
4.952	64.92	2
0	82.36	4
8.04	52.6	0
0.224	66.12	3
6.984	59.96	1
8.584	53.96	0
8.264	53.16	0
6.68	59.2	1
0	79.32	4
3.536	62.56	2
0.704	68.52	3
7.528	51.32	0
5.896	57.24	1
1.024	70.12	3
0	83.24	4
0.032	65.16	3
0	82.04	4
2.672	61.12	2
0	84.12	4
2.744	61.24	2
0.352	66.76	3
7.608	51.52	0
1.584	72.92	3
2.72	61.2	2
8.616	54.04	0
4.256	63.76	2
0.944	69.72	3
4.496	64.16	2
0.784	68.92	3
0	83.72	4
5.288	55.72	1
6.6	59	1
8.792	54.48	0
3.56	62.6	2

3.944	63.24	2
1.92	74.6	3
5.944	57.36	1
0.112	65.56	3
1.952	74.76	3
1.536	72.68	3
0	79	4
0	84.6	4
0.736	68.68	3
5.832	57.08	1
6.072	57.68	1
7.464	51.16	0
0	76.04	4
0.8	69	3
4.976	64.96	2
1.44	72.2	3
0	75.88	4
6.12	57.8	1
3.8	63	2
0.608	68.04	3
6.952	59.88	1
0.4	67	3
4.136	63.56	2
7.096	50.24	0
8.776	54.44	0
3.008	61.68	2
5.8	57	1
1.936	74.68	3
8.024	52.56	0
8.056	52.64	0
7.992	52.48	0
0	77.8	4
3.392	62.32	2
0	82.44	4
7.256	50.64	0
0	82.76	4
0	83.32	4
1.808	74.04	3
6.552	58.88	1
6.392	58.48	1
6.168	57.92	1
8.328	53.32	0
1.872	74.36	3
0	79.4	4
3.08	61.8	2
6.568	58.92	1
5.928	57.32	1

1.824	74.12	3
0	81.48	4
1.184	70.92	3
4.04	63.4	2
2.36	60.6	2
0.384	66.92	3
6.808	59.52	1
3.752	62.92	2
8.36	53.4	0
7.432	51.08	0
0	77.56	4
5.64	56.6	1
2.816	61.36	2
0	80.36	4
6.76	59.4	1
3.44	62.4	2
8.376	53.44	0
0	78.76	4
6.728	59.32	1
4.088	63.48	2

5.2 Selected Data

Stress Level 0	Stress Level 1	Stress Level 2	Stress Level 3	Stress Level 4
53.12	60	63.36	74.2	75.72
52	58.44	60.92	72.76	75.64
55	57.76	64.4	68.84	84.76
50.28	59.64	64.32	70.2	81.32
53.6	56.16	62.44	69.16	81.8
54.12	56.32	64.64	66.04	82.28
52.68	56.84	60.52	70.36	79.16
53.48	55.48	60	71.64	76.44
51.12	58.36	60.24	74.84	78.84
54.28	56.8	61.4	69.48	80.84