Question1:

	Total	Sucess	% sucess	Fail	% failed
Female	450	40	8.89	410	91.11
Male	760	124	16.32	636	83.68

% of successful male is higher compared to that of female

Question2:

Frequency distribution – Stem and leaf graph

No of times used	
Stem	Leaf
3	6
4	7
5	2 2 4 9 9
6	0 1 1 3 4 5 8
7	03 5 6 7 8
8	0 3 4 4 4 4 7
9	0 5 5

Smallest time used 36 on 1 day

Largest number of time used 95 on two days

Number of time the machine used cluster between 60 and 90 with mode value of 84.

Number of times the machine used on a typical day, Mean = sum of all values divided by total days = 2116/30 = 70.5

Question3:

Nurses survey five figure summary

Minimum value = 2

Q1 = 9.5

Median= 23

Q3 = 28.5

Maximum = 42

Health care assistant survey five figure summary

Minimum value = 3

Q1 = 16

Median = 23

Q3 = 30

Maximum = 72

While for both the group the median value is same, the max value (42 vs 72), mean value (20.65 vs 24.05) and the inter quantile range value (19 vs 14) are different.

Question4:

two Sample t -test

Cholesterol level measurement

Null hypothesis: True difference in means of the control group and the exercise group is equal to 0

Alternative hypothesis: true difference in means of the control group and the exercise group is not equal to 0

t is the t-Test statistic value (t=3.776)

df is the degrees of freedom (df=19)

p-value is the significance level of the t-Test (p-value= 0.001278)

Confidence interval of the mean at 95 percent (confidence interval: [0.2274728 , 0.7932545]

Sample estimates refers to the mean value of the two samples (Mean in group control = 5.064000, Mean in group exercise = 4.553636)

The p-value of the test is 0.001278 which is less than the significance level alpha = 0.05. We conclude that the null hypothesis is rejected that the true difference in means of the control group and the exercise group is not equal to 0 and fail to reject the alternative hypothesis.

Question5:

Paired t-test

Obese student weight

two Sample t -test

Cholesterol level measurement

Null hypothesis: true correlation in Obese student weight between before and after 12 weeks a low-calorie diet treatment is equal to 0

Alternative hypothesis: true correlation in Obese student weight between before and after 12 weeks a low-calorie diet treatment is not equal to 0

t is the t-Test statistic value (t=3.0737)

df is the degrees of freedom (df=45)

p-value is the significance level of the t-Test (p-value= 0.003585)

Confidence interval of the mean at 95 percent (confidence interval:
[0.1469699 , 5.6285366]

Sample estimates refers to the mean value of the student weight before and after 12 weeks a low-calorie diet treatment (Mean of the difference 2.4165)

The p-value of the test is 0.003585 which is less than the significance level alpha = 0.05. We conclude that the null hypothesis is rejected that the true difference in means of the student weight before and after 12 weeks a low-calorie diet treatment is not equal to 0 and fail to reject the alternative hypothesis.