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3.(a)(iii) mean = $\frac{fx}{\Sigma x}$

$= (3\times27)+(8\times23)+(13\times43)+(18\times78)+(23\times123)+(28\times180)$
$+(33\times144)+(38\times136)+(43\times118)+(48\times133)+(53\times143)$
$+(58\times182)+(63\times137)+(68\times90)+(73\times46)+(78\times20)$
$+(83\times14)$

1637

$= \frac{70441}{1637}$

$= 43.0305$

3(b) 36.5, 36.5, 36.5, 36.6, 36.6, 36.6, 36.7, 36.7, 36.7, 36.7
36.7, 36.7, 36.7, 36.7, 36.8, 36.8, 36.8, 36.9, 36.9, 36.9

3.(b)(i) mean temperature = $\frac{\text{total of temperature}}{\text{total number of temperature}}$

$= \frac{(36.5\times3)+(36.6\times3)+(36.7\times8)+(36.8\times3)+(36.9\times3)}{20}$

$= \frac{734}{20}$

$= 36.7$

3(b)(ii) mode temperature = 36.7

3(b)(iii) median temperature = $\frac{50}{100}$ x total number of temperature

$= \frac{1}{2}\times20$

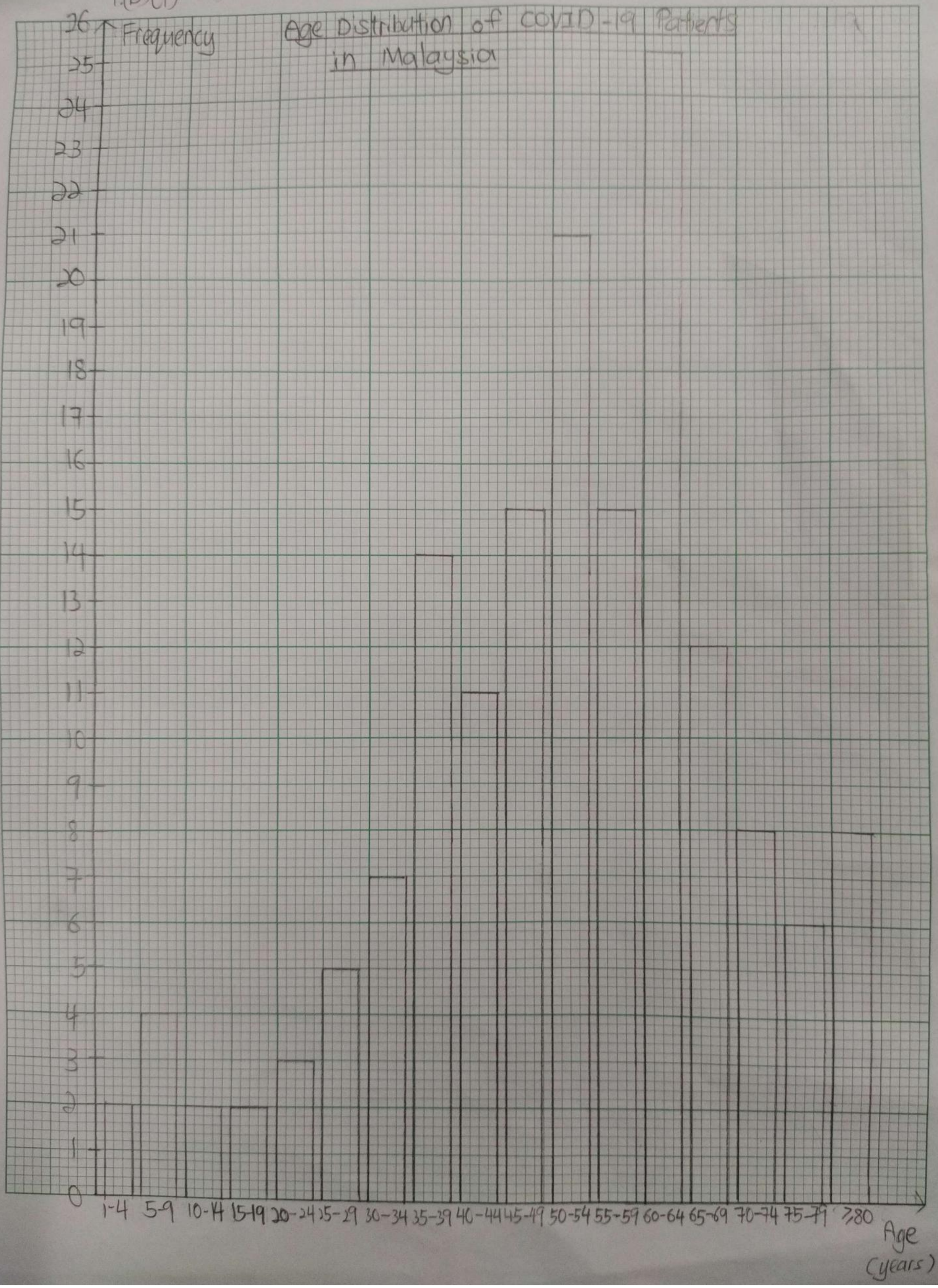
$= 10$

$= \frac{10th+11th}{2}$

$= \frac{36.7+36.7}{2}$

$= 36.7$

4.(b)(i)



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4(b)(ii) Using Rstudio,

skewness = -0.4765937

kurtosis = 3.067769

(iii) The distribution generated in (i) has a skewness that is lower than zero and has exross kurtosis of 0.067769. The distribution is skewed to the left or skewed negatively. Skewness is a measure of dataset symmetry. The skewness is between -0.5 and 0.5, here the data are fairly symmetrical. The distribution is a leptokurtic. The distribution has tails that are longer and fatter and the peak is higher and sharper if we compared to normal distribution.

The distribution of COVID-19 patients in china is skewed to the left and skewed negatively and it skewed more than the distribution generated in (i). The distribution of COVID-19 Patients in china is leptokurtic. It has peak that is higher and sharper than that in distribution generated in (i). The tails of this distribution is also longer than that in distribution generated in (i).

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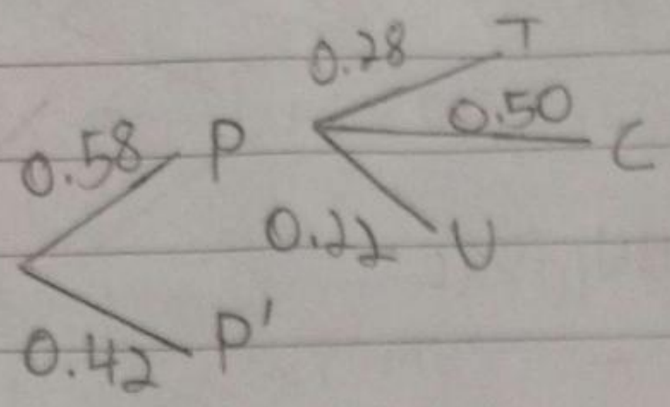
5. (a)



let
P'- screening test get positive
P'- screening test get negative

T - Has history travelling to country with COVID-19 outbreak.
C - Has contact with confirmed positive peison.
U - Unknown cluster

5(b) Probality = 100 - 58
= 42
$= \frac{42}{100} = 0.42$

5.(c) Number of people = 72 × 0.42
= 30.24 = 31 person

5(d) P(C(PUT) ∩ (P∩C))
= (0.58 × 0.28) + (0.58 × 0.5)
= 0.4524

5(e)(i) Probability = 1 - 0.016 - 0.34
= 0.644

5.(e)(ii) Number of people
= 0.644 × total number of people
= 0.644 × 2766
= 1781.304 = 1782 peison.