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**DEPARTMENT: ECONOMICS**

**MATRIC NO: 19/SMS01/026**

**COURSE: ECO 104; STATISTICS**

<i>Viewing time</i>	<i>No of students</i>	<i>Class boundaries</i>	<i>Midpoint</i>	<i>Cumulative frequency</i>	<i>Relative frequency %</i>
300-399	14	299.5-399.5	349.5	14	3.5%
400-499	46	399.5-499.5	449.5	60	11.5%
500-599	58	499.5-599.5	549.5	118	14.5%
600-699	76	599.5-699.5	649.5	194	19%
700-799	68	699.5-799.5	749.5	262	17%
800-899	62	799.5-899.5	849.5	324	15.5%
900-999	48	899.5-999.5	949.5	372	12%
1000-1099	22	999.5-1099.5	1049.5	394	6%
1100-1199	6	1099.5-1199.5	1149.5	400	1.5%

1a. upper class limit of the 5<sup>th</sup> class= 799

b. lower class limit of the 8<sup>th</sup> class= 1000

c. class mark of the 7<sup>th</sup> class

$$= \frac{899.5 + 99.5}{2} = \underline{949.5}$$

d. class boundary of the last class = 1099.5-1199.5

e. class size = 100

f. frequency of the 4<sup>th</sup> class = 76

g. relative frequency of the 6<sup>th</sup> class

$$= \frac{62}{400} = \underline{0.155}$$

As a %  $0.155 \times 100 = \underline{15.5\%}$

h. students with viewing time below 600 =  $58 + 46 + 14$

$$= 118$$

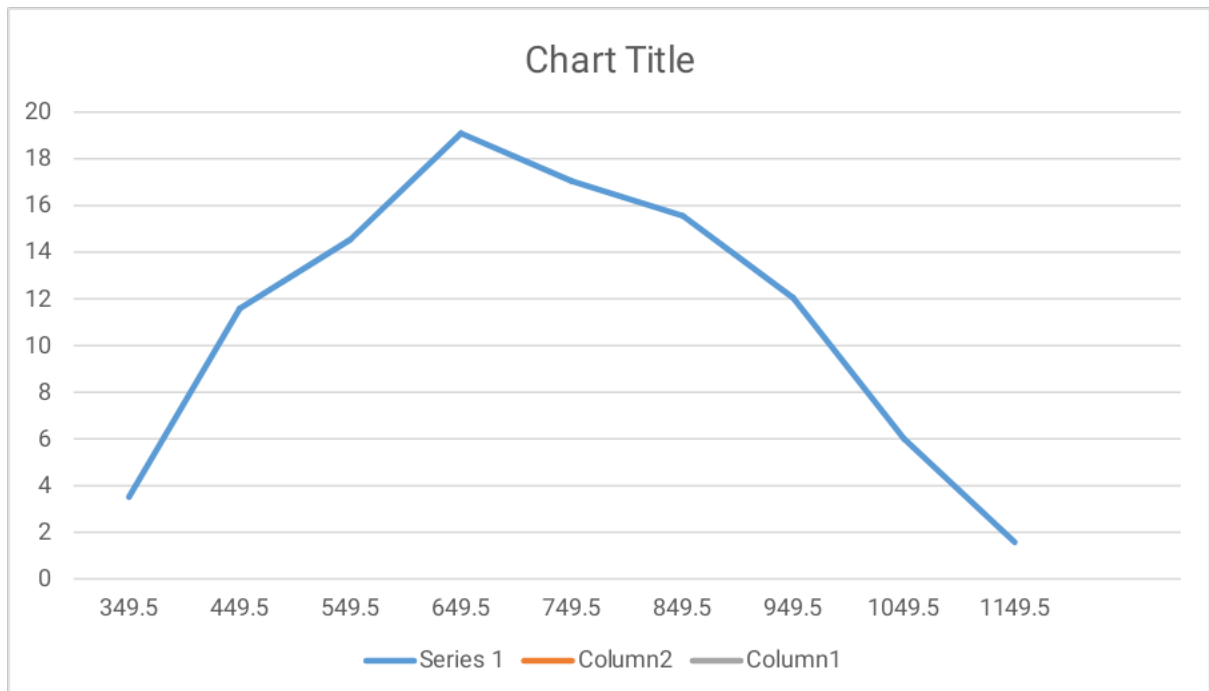
$$= \frac{118}{400} \times 100 = \underline{29.5\%}$$

i. greater or equals 90mins =  $48 + 22 + 6$

$$= 76$$

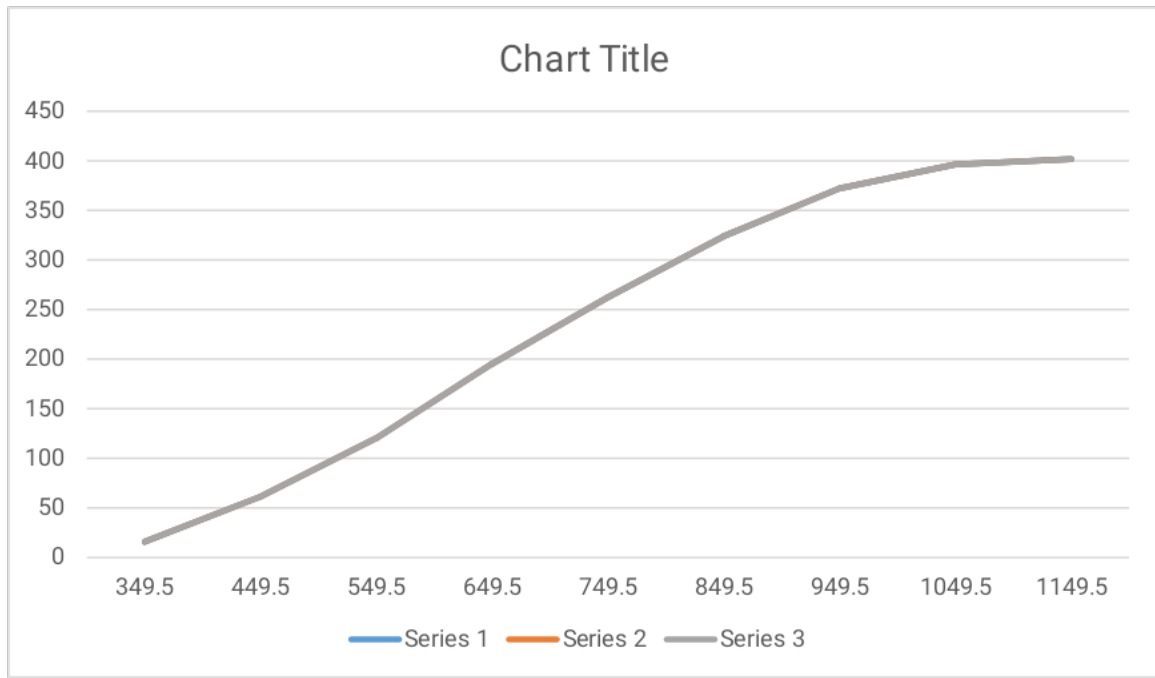
$$\% = \frac{76}{400} \times 100 = \underline{19\%}$$

### 2a. RELATIVE FREQUENCY POLYGON



## 2b. FREQUENCY HISTOGRAM

## 2c. CUMMULATIVE FREQUENCY GRAPH



<i>GRADE</i>	<b>NO OF STUDENTS</b>	<b>BOUNDARIES</b>	<b>MIDPOINT</b>
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<i>90-100</i>	<i>9</i>	<i>89.5-100.5</i>	<i>95</i>
<i>80-89</i>	<i>32</i>	<i>79.5-89.5</i>	<i>84.5</i>
<i>70-79</i>	<i>43</i>	<i>69.5-79.5</i>	<i>74.5</i>
<i>60-69</i>	<i>21</i>	<i>59.5-69.5</i>	<i>64.5</i>
<i>50-59</i>	<i>11</i>	<i>49.5-59.5</i>	<i>54.5</i>
<i>40-49</i>	<i>3</i>	<i>39.5-49.5</i>	<i>44.5</i>
<i>30-39</i>	<i>1</i>	<i>29.5-39.5</i>	<i>34.5</i>

$$\underline{Q1} = 1.N/4 = (1 \times 20)/4$$

$$= 30$$

$$30 - 15 = 15$$

$$= 59.5 + 15/20 \times (69.5 - 59.5)$$

$$= 59.5 + 7.142857143$$

$$= \underline{66.64}$$

$$\underline{Q2} = 2.N/4 = (2 \times 120)/4$$

$$= 60$$

$$60 - 36 = 24$$

$$69.5 + 24/43 \times (79.5 - 69.5)$$

$$69.5 + 5.581395349$$

$$= \underline{75.08}$$

$$\underline{Q3} = 3.N/4 = (3 \times 120)/4 = 90$$

$$90 - 79 = 11$$

$$79.5 + 11/32 \times (89.5 - 79.5)$$

$$= 79.5 + 3.4375$$

$$= \underline{82.9375}$$

**3B.** P10, P25, P90, P75

10N/100, 25N/100, 90N/100, 75N/100

**P10**= 12

12-4=8

49.5 + 8/11 x (59.5-49.5)

=49.5+7.272727

**=56.77**

**P25**=30

30-15=15

59.5 + 15/21 x (69.5-59.5)

=59.5+7.14

**=66.64**

**P90**= 108

108-79=29

79.5+29/32 x (89.5-79.5)

= 79.5+ 9.0625

**=88.56**

**P75**= 90

90-79= 11

79.5 + 11/32 x (89.5-79.5)

=79.5+3.4375

**=82.9375**

