

Exercise # 2

Q1. A study was conducted in which they measured **Incidental Intracranial Aneurysms (IIAs)** in 159 patients .The researchers examined complications and concluded that IIAs can be safely treated without causing mortality and with a lower complications rate than previously reported.

The following table represent the sizes (in millimeters) of the 159 IIAs in the sample:

IIAs size	frequency	Cumulative Frequency	Relative frequency	Cumulative Relative Frequency	Percentage frequency
0 - 4	29		0.182		
5 - 9	87		0.547		
10 - 14	26		0.163		
15 - 19	10	152	0.0629		
20 - 24	4		0.025		2.5%
25 - 29	1		0.006		
30 - 34	2		0.013		
Total	159				

Complete the table , then answer the following questions

- The variable is **IIAs size** , the type of variable is **Quantitative-continues** ..
- The number of patient with IIAs size between 10 – 14 is **26**.....
- The number of patient with IIAs size less than or equal 19 is **152**...
- The relative frequency patient with IIAs size between 5 - 9 is **0.547**...
- The proportion of patient with IIAs size less than 15 is ...

$$\frac{29+87+26}{159} = \frac{142}{159} = 0.893 = 0.893 \quad \text{or} \quad \frac{152-10}{159} = 0.893$$
- The percentage of patient with IIAs size between 15 – 29 is...

$$0.0629 + 0.025 + 0.006 = 9.39\%$$
- The true class interval of (20 – 24) is **19.5-24.5**....
- Width is **5**.....
- Maximum value is **34**.....

$$d = 20 - 19 = 1$$

$$20 - \frac{1}{2} = 19.5$$

$$24 + \frac{1}{2} = 24.5$$

Q2: The following table shows the number of hours 45 hospitals patients slept following the administration of a certain anesthetic .

True Class interval	Frequency	Midpoint
0.5 – 5.5	21	
5.5 – 10.5	16	--8--
--10.5 – 15.5--	--6--	
15.5 – 20.5	2	
Total	45	

Answer the following questions:

- The variable is **number of hours patients slept following the administration of a certain anesthetic** The type of variable is
Quantitative -discrete.....
 - The sample size is**45**.....
 - The midpoint for the interval 5.5 – 10.5 is $\frac{5.5+10.5}{2} = 8$
 - The number of patients spend less than or equal 15.5 hour is **$21 + 16 + 6 = 43$**
 - The relative frequency of patients spend between 0.5 -10.5 hour is
... $\frac{21+16}{45} = 0.822$
 - The class interval for the true class interval (5.5 – 10.5) is
.....**6-10**..... (where $\frac{d}{2}=0.5$)
 - The percentage of patients spend more than 10.5 hour is
 $\frac{6+2}{45} * 100\% = 17.78\%$
 - Width is**5**.....
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H.W

In a study of physical endurance of male college freshman , The following table show the composite endurance scores based on 155 exercise routines were collected

endurance scores	frequency	Relative frequency
115 – 134	6	0.039
135 – 154	7	0.045
155 – 174	--16--	0.103
175 – 194	31	0.200
195 – 214	37	--0.239--
215 - 234	--28--	0.181
235 – 254	18	0.116
255 – 275	8	0.052
275 – 294	3	0.019
295 - 314	1	0.006
Total	--155--	1

Answer the following questions :

1. The variable is ... **endurance scores** The type of variable is **Quantitative Continues**.....
2. The population is ...**All male college freshman**
3. The midpoint for the interval 195-214 is $\frac{195+214}{2} = 204.5$
4. The number of males with endurance score more than or equal 235 is**30**.....
5. The proportion of males with endurance score between 155 - 234 is ... $\frac{16+31+37+28}{155} = 0.723$
6. The true class interval for class interval (215 - 234) is ...**214.5 – 234.5**.....
7. The percentage of males with endurance score between (275 – 294) is ...**0.019 = 1.9%**.....
8. Width is**20**.....
9. Minimum value is**115**.....

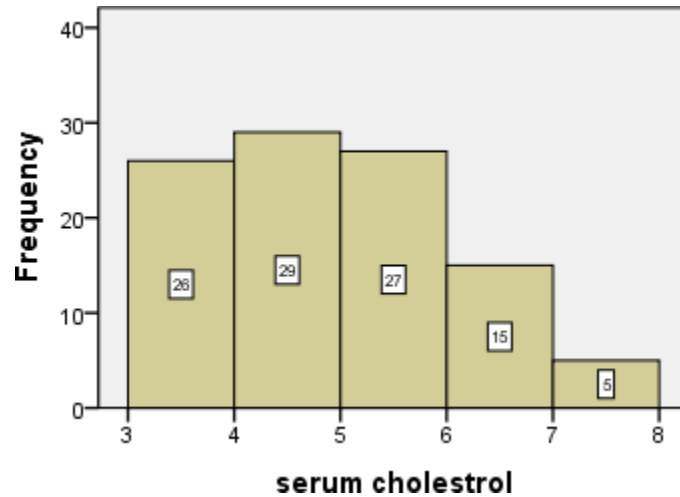
Q3: For a sample of patients, we obtain the following graph for approximate hours spend without pain after certain surgery .



Answer the following questions:

1. The type of the graph is ...**Histogram**.....
 2. The variable is **hours spend without pain after certain surgery**.
The type of the variable is ... **Quantitative – continuous** ...
 3. The sample size is **$10 + 15 + 25 + 15 + 10 + 5 = 80$**
 4. The number of patients spend a round 2 hours without pain is**15**.....
 5. The percent of patients spend 3.5 hours or more without pain is **$\frac{15+10+5}{80} * 100\% = 37.5\%$**
 6. The number of patients stayed the longest time without pain is**5**.....
 7. The lowest number of hours spent without pain is**1**.....
 8. Width is**1**.....
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H.W : For a sample of Saudi women , we obtain the following graph for the serum cholesterol (in mmol/l) .



Answer the following questions:

1. The type of the graph is**Histogram**..
 2. The variable is ... **serum cholesterol** The type of the variable is ...**Quantitative - continuous**...
 3. The sample size is**102**.....
 4. The number of Saudi women with more than 6 serum cholesterol is**20**.....
 5. The percent of Saudi women between 4 and 6 serum cholesterol is**54.90%**.....
 6. The serum cholesterol with the lowest percentage is between the interval**7-8**.....
 7. Width is**1**.....
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