

Valencia College  
 Division of Engineering, Computer Programming and Technology  
 EGN 2440 Probability and Statistics for Engineers  
 Summer 2015  
 Instructor: Dr. Kwabena Oforu, P.E.

Quiz 1A

You will receive credit for showing your steps even if your final answers are wrong.

1. An industrial engineer measured the following processing times (in minutes) at a station on a production;

2	6.5	4.5	9	9	5	5
3.5	5.5	18	10	7	15	18
4	3	8	8.5	14.5	16	17
3.9	3	7.5	7.5	8	13	

Construct the frequency table (4 points)

Time Intervals (sec)	Frequency	Cumulative Frequency
[0,5)	7	7
[5,10)	12	19
[10,15)	3	22
[15,20)	<del>27</del> 5	27

2. Calculate the median of this data. (2 points)

median position is  $\frac{27+1}{2} = 14^{\text{th}}$  position

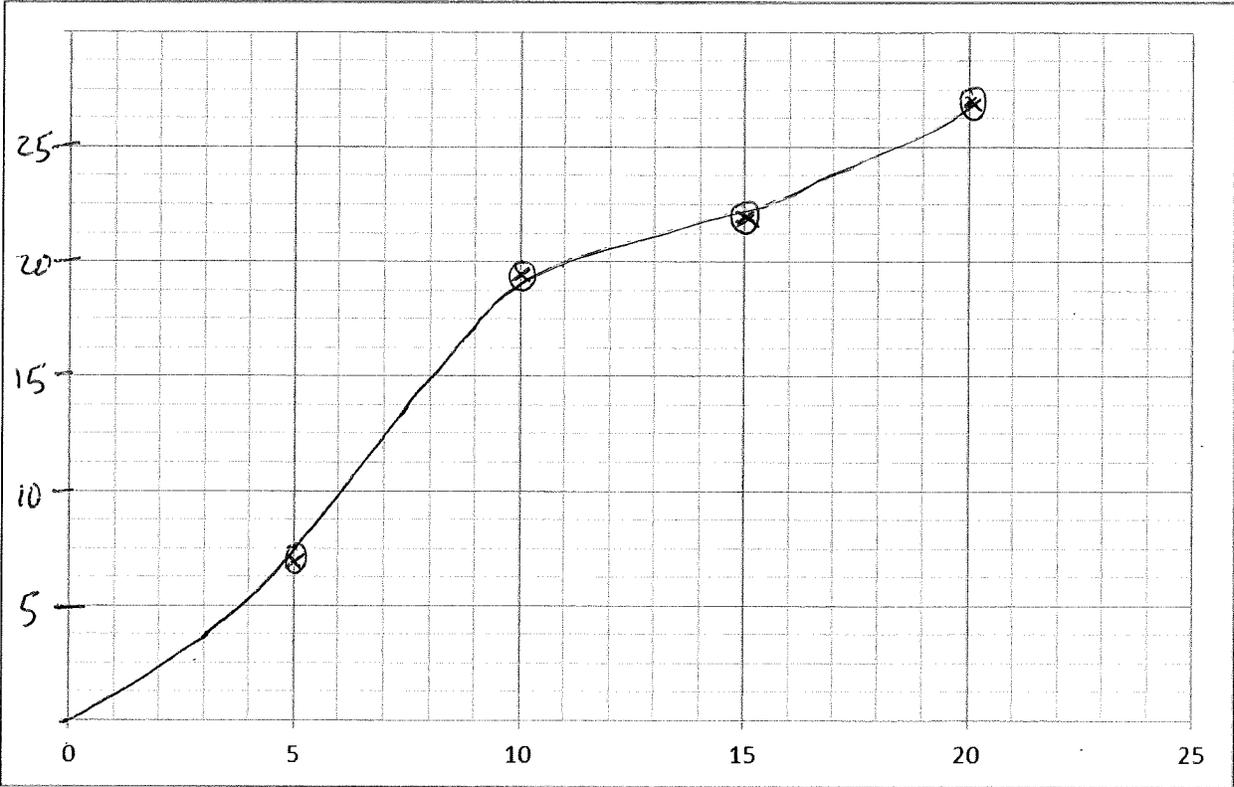
median = 7.5

3. Determine the mode of this data. (2 points)

Multimodal we have

3, 5, 7.5, 8, 9

4. Draw the cumulative frequency diagram for this data (2 points)



Valencia College  
 Division of Engineering, Computer Programming and Technology  
 EGN 2440 Probability and Statistics for Engineers  
 Summer 2015  
 Instructor: Dr. Kwabena Oforu, P.E.

Quiz 1B

You will receive credit for showing your steps even if your final answers are wrong.

1. A traffic engineer measured the following red times (in seconds) experienced by vehicles at a traffic signal;

2	6.5	4.5	9	9	5	5
3.5	5.5	18	10	7	15	18
4	3	8	8.5	14.5	16	17
3.9	3	7.5	7.5	8	13	

Construct the frequency table (4 points)

Time Intervals (sec)	Frequency	Cumulative Frequency
[0,5)	7	7
[5,10)	12	19
[10,15)	3	22
[15,20)	5	27

2. Calculate the mean of this data. (2 points)

Median position is  $\frac{27+1}{2} = 14^{\text{th}}$  position

mean,  $\bar{x} = \frac{\sum x_i}{n} = 8.58$

3. Calculate the 75<sup>th</sup> percentile of this data. (2 points)

$P_{75} \rightarrow 0.75(27) = 20.25$  position

20 <sup>th</sup>	20.25	21 <sup>st</sup>
↓	↓	↓
10	$P_{75}$	<del>14.25</del> 13

$$\frac{P_{75} - 10}{20.25 - 20} = \frac{13 - 10}{21 - 20}$$

$P_{75} = 10.750$

4. Draw the histogram for this data (2 points)

