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17. Find for the following data set **(Q# a-f; 2 marks each):**

10.0, 10.8, 10.9, 11.2, 11.4, 11.4, 11.6, 11.6, 11.7, 11.8, 12.0, 12.2, 12.4, 12.9, 13.3, 13.4, 13.5, 14.6, 15.7, 17.4, 18.3, 19.0, 19.4, 19.4, 19.4, 19.5, 19.7, 19.8, 19.9,

a) **The mean** = _____

b) **The median** = _____

c) **The mode** = _____

d) **The range & mid-range** = _____ / _____

e) **Which do you think is the better Measure of Central Tendency? Why?**

_____

_____

_____

_____

f) **Comment on the skewness and the shape of the distribution**. (Hint: you don't have to graph in order to answer, there is another way….)

_____

_____

_____

_____

18. The average mark of 25 students in a class was 82. Another student took a make-up test and the class average dropped by 2 marks. **What was the mark of that student who took the make-up test? (2 marks)**

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19. The following data represent the systolic blood pressure reading in mmHg for each of 10 randomly selected middle-aged males who were taking a blood pressure medication:
130, 144, 127, 169, 127, 121, 144, 149, 125, 148

a. Calculate the mean, median, and mode for the data (3 marks).

Mean = _____, Median: _____, Mode: _____

b. Calculate the 10% trimmed mean for the data (2 marks).

10% Trimmed Mean = _____,

20. The following table shows the frequency distribution of the number of hours/week spent on cell phones by 100 college students (**2marks each x3 = 6 marks**).

Hours per Week	Frequency (*f*)	Midpoint	Weighted Class Midpoint	Cumulative Frequency
0 to under 10	9			
10 to under 20	20			
20 to under 30	36			
30 to under 40	25			
40 to under 50	10			
Totals	**100**			

a) The mean = _____

b) The median = _____

c) The modal class = _____

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21. A personal trainer recorded the average speed (in km/h) of his client running 5 laps of a 1-km track: {9.8, 11.1, 9.2, 10.3, and 9.7}. **Determine the client's average speed over the 5-km run. (2 marks)**

Average Speed = _____

22. The following table lists the scores a student received and the weights for each assignment. **Calculate this student's final grade. (2 marks)**

Assignment	**Mark (x)**	**Weight (w)**	**Weighted Mark (x•w)**
Quizzes	75	20%	
In Class Group Work	85	15%	
Midterm Exam	70	25%	
Final Exam	62	40%	
Totals		100%	

Student's Final Grade = _____

23. The rates of return on investment earned by a pharmaceutical company for four successive years were 15%, -10%, 20%, and 35%. **What is the geometric mean rate of return on the investment by this company? (3 marks)**
(Hint: -10% from 100% = ?)

Rates of Return = _____

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24. A dental office is doing an inventory of the number of pairs of latex gloves used by hygienists over the past six months. The amounts were

272, 246, 216, 298, 301, 245.

a. What is the average monthly usage (arithmetic mean) of pairs of latex gloves? (2 marks)

Average Monthly Usage - _____

b. If each pair of latex gloves costs $0.85, what is the estimated monthly cost for the latex gloves used per hygienist? (1 mark)

Cost = _____

25. The mean price that five passengers paid for a domestic flight is $420 per ticket. The first three passengers paid $485, $530, and $333 from various sources. **If the fourth and fifth passengers paid the same amount, what was the price of each of their tickets? (2 marks)**

Price = _____

26. For the following data set: 65, 84, 85, 86, 88, 97, 117, **find Q_1, Q_2, Q_3 (6 marks)**

Q_1 = _____, Q_2 = _____, Q_3 = _____

27. A medical accountant checks the electric bills for a medical clinic for a six-month period. The mean is $375.89 and the mode is $374.50. **Using the empirical relationship, estimate the median and comment on the skewness of the distribution. (3 marks)**

_____

_____

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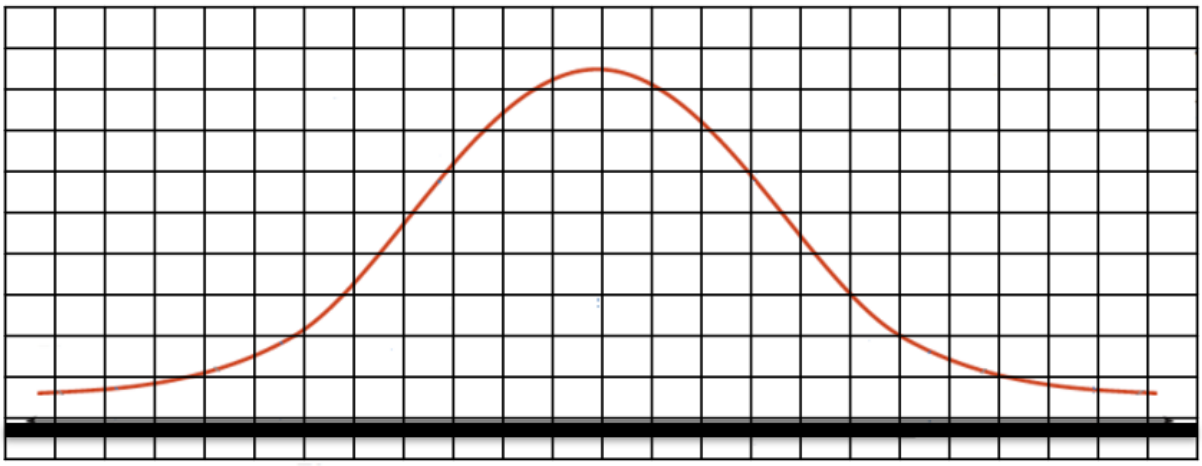
28. An study was done to determine the average length (cm) of the newly discovered snake with a mean length of 500 cm and a standard deviation of 100 cm. **Use the empirical rule to answer the following:**

a) Draw this normal distribution on the graph below and label the mean $\bar{x}$ and all three (3) standard deviations; percentages and real numbers. (3 marks)



b) Approximately what percent of the snakes will have a length between 400 and 600? (1 marks)

Two Values = _____/_____

c) Randomly selected snakes will have a 95% chance of having lengths fall between what two values? (1 marks)

Two Values = _____/_____

d) Randomly selected students will have a 99.7% chance of having lengths fall between what two values? (1 marks)

Two Values = _____/_____

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29. A patient records her daily blood pressure (in mmHg):

	Systolic	Diastolic
Monday	146	92
Tuesday	132	84
Wednesday	154	102
Thursday	128	88
Friday	166	110
Saturday	140	96
Sunday	152	86

a. Determine the range for both types of blood pressure. (2 marks)

Range = _____

b. **Using the Range Rule of Thumb estimate the standard deviation for both types of blood pressure. (2 marks)**

Standard Deviation = _____

c. Calculate the standard deviation for both types of blood pressure using the exact data. (6 marks)

Systolic	$\bar{x}$	$(x-\bar{x})$	$(x-\bar{x})^2$	Diastolic	$\bar{x}$	$(x-\bar{x})$	$(x-\bar{x})^2$
146				92			
132				84			
154				102			
128				88			
166				110			
140				96			
152				86			
total		**0**		**total**		**0**	

$S_{(systolic)}$ = _____ $S_{(diastolic)}$ = _____

d. Compare the standard deviations of both sets of data and make an opinion concerning their spreads. (1 mark)

_____

_____