

Unit 6 Study Guide Key

1. Cluster
2. Cluster
3. Cluster
4. Convenience
5. Simple Random
6. Systematic
7. Convenience
8. Stratified
9. Simple Random
10. Stratified

Top Left

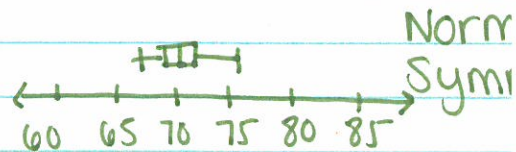
12. ~~Normal~~ Normal, Symmetric, Unimodal

Top Right: Skewed Right, Unimodal

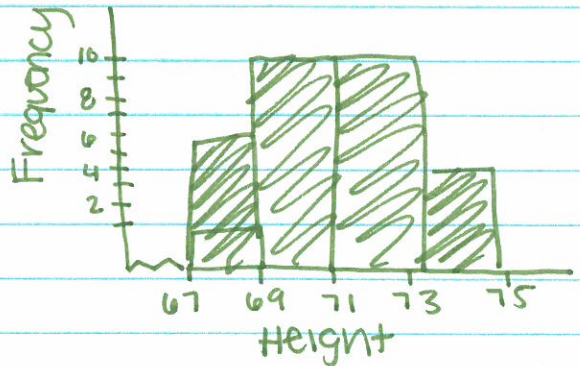
Bottom Left: Symmetric, Short tails, unimodal

Bottom Right: Uni-modal, skewed right

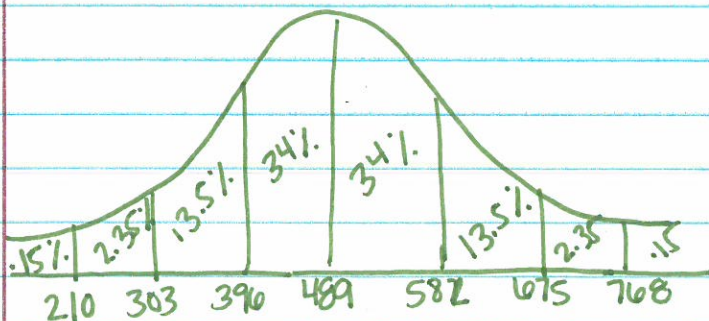
13. Min: 67 $\sigma = 1.87$
 Q1: 69 $\sigma^2 = 3.5$
 Med: 70
 Q3: 71 No outliers!
 Max: 74



Height	Frequency
67 - 69	6
69 - 71	10
71 - 73	10
73 - 75	4



14.



- a) 81.5%
- b) 2.5%
- c) $3500(.815) = 2852.5$
 ≈ 2852 student

15.	Old	New	They would all increase by 5
Mean	71	76	
Med	72	77	
Mode	72	77	

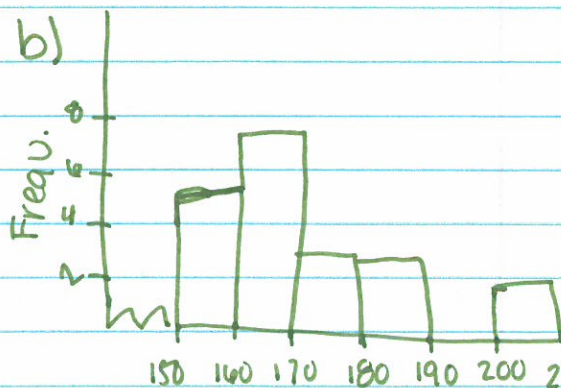
16. Mean: 70.2 Med: 70.5 Mode: 70.5
 *Change last # in bin to +1 higher
 ie: 63-65 becomes 63-66

17. *Change last # in each bin to +1 higher
 ie: 20-29 becomes 20-30
 SKIP THIS QUESTION

18. i) Mean = 25 ii) Mean = 22.8 iii) Mean = 125
~~σ~~ σ = 9.09 σ = 9.74 σ = 9.09
 a) Group iii
 b) Group ii

19. a)

15	2 3 3 6 7
16	0 0 2 2 3 6 7
17	5 7 8
18	1 3 6
19	
20	6 6
21	
22	8



Key: 15 | 2 = 152

c) Min = 152 Med = 166
 Q1 = 158.2 Q3 = 182
 Max = 228

d) $IQR = 182 - 158.5 = 23.5$ birds

50% of our data falls between 158.5 + 182

e) There are gaps and outliers. It is also Skewed Right

f) $IQR(1.5) = (23.5)(1.5) = 35.25$

$Q1 - 35.25 = 123.25$

$Q3 + 35.25 = 217.25$

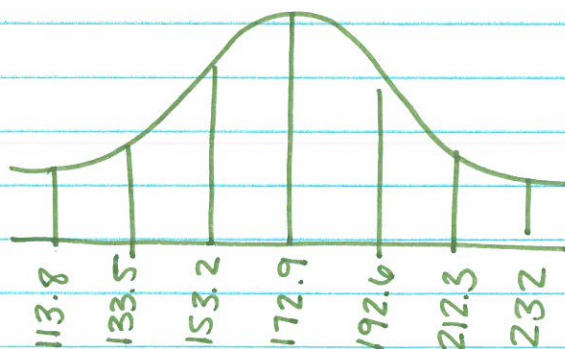
Anything less than or equal to 123.25 or greater than or equal to 217.25 is an outlier
228 is an outlier

g) Mean = 172.9 Med = 166 Mode = 153, 160, 166
Due to the outlier and that our data is not continuous, median would be the best measure of central tendency

h) Mean + 5 # summary would all decrease by 1. However, standard deviation would remain the same because each data point would remain the same distance from the mean

i) $\sigma = 19.7$

225 is within 3 s.d. of the mean

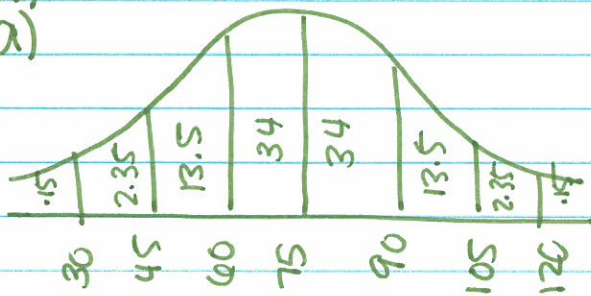


163 is within 1 s.d. of the mean

J) 68% → 153.2 - 192.6
 95% → 133.5 - 212.3
 99.7% → 113.8 - 232

K) 0.15%

20 a)



b) $1000(.475) = 475s$

c) $1000(.84) = 840s$

21. a) Mean = 82.7 Median = 85 Mode = 85 Total

b) The mean would increase by 5 & the standard deviation would remain the same

c) From the frequency table we do not know exact values, so in this case it appears nothing changes

22. a) The larger standard deviation, the more vari

b) DO IT! 😊

23. A. a. mean (normal/symmetric/continuous)
 B. C

24. A. C Mode (there still is no mode)
 B. D Range

25. D