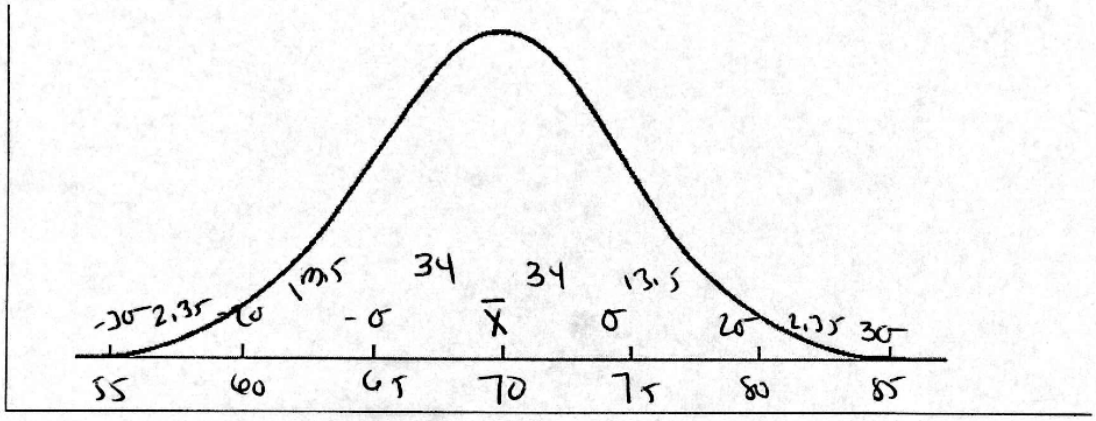
In a normal distribution, what percent of the values lie:

1. below the mean? 50%
2. above the mean? 50%
3. within one standard deviation of the mean? 34+34 = 68%
4. within two standard deviations of the mean? 13.5 + 68 + 13.5 = 95%
5. within three standard deviations of the mean? 2.35 + 95 + 2.35 = 99.7%

6. 2000 freshmen at State University took a biology test. The scores were distributed normally with a mean of 70 and a standard deviation of 5. Label the mean and three standard deviations from the mean.



Answer the following questions based on the data:

a) What percentage of scores are between scores 65 and 75? 34+34 = 68%

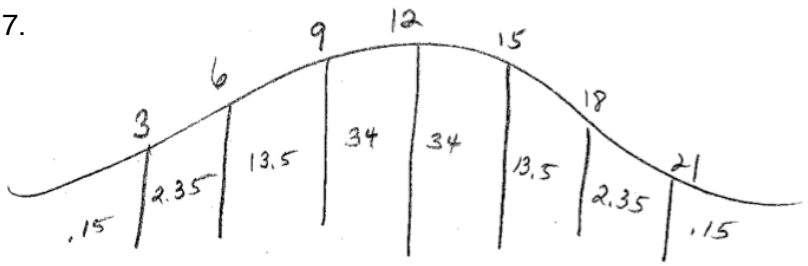
b) What percentage of scores are between scores 60 and 70? 13.5 + 34 = 47.5%

c) What percentage of scores are between scores 60 and 85? 13.5+34+34+13.5+2.35 = 97.35%

d) What percentage of scores is less than a score of 55? 100 − 99.7 = .3 $\frac{.3}{2}$ = .15%

e) percentage of scores is greater than a score of 80? 2.35 + .15 = 2.5%

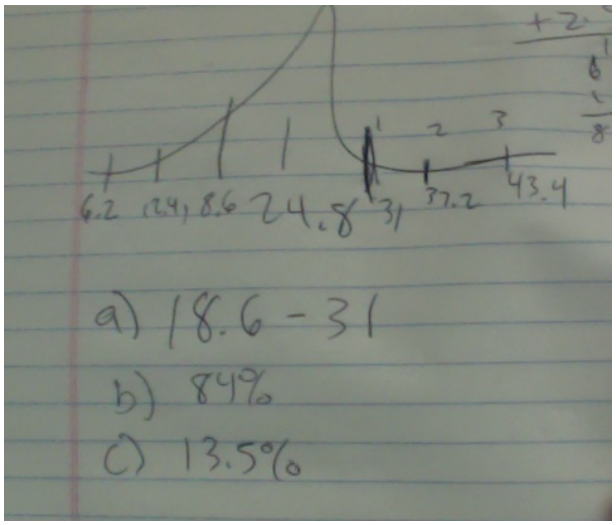
7.



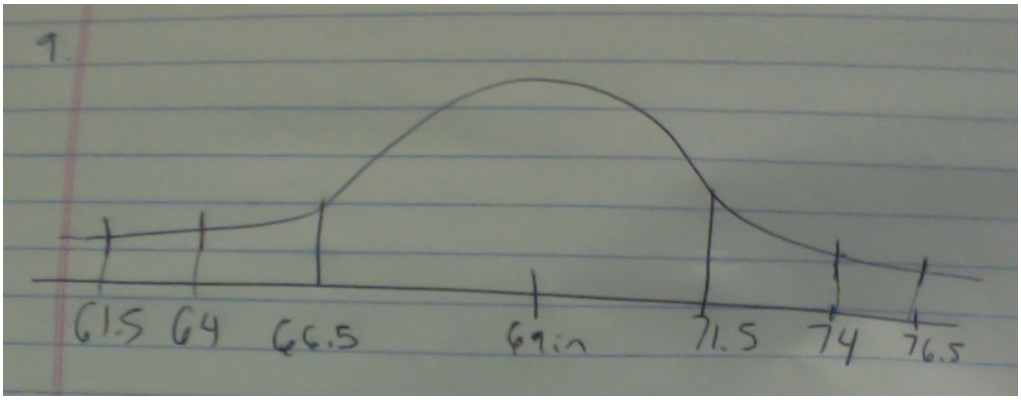
a. 68%
b. 34%
c. 2.5%
d. 16%

75

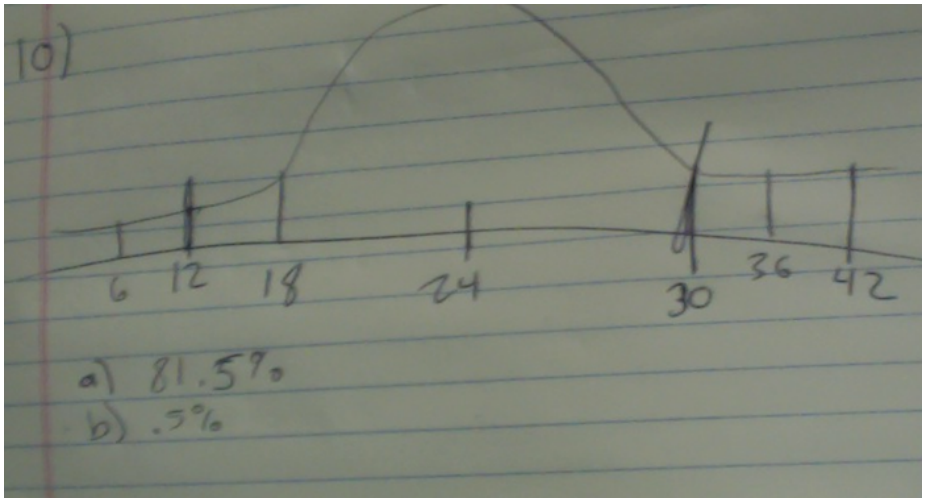
8.


6.2
12.4
18.6
24.8
31
37.2
43.4
a) 18.6 - 31
b) 84%
c) 13.5%

9.


9.
61.5
64
66.5
69 in
71.5
74
76.5

10.


10)
6
12
18
24
30
36
42
a) 81.5%
b) .5%