Day 2 Homework

(1-2) For each, determine whether the data appears to be skewed right, skewed left, or normally distributed.

1. 20 Most Visited National Parks

Visitors (millions)	Number of Parks
3-4	9
4-5	3
5-6	2
6-7	2
7-8	1
8+	3

skewed right

2. Tallest Buildings in the World

Stories	Number of Buildings
0-39	1
40-59	11
60-79	35
80-99	9
100+	6

normally distributed

3. a. Calculate the standard deviation of the data: 49, 49, 52, 53, 56, 62, 65, 66

You show work :)

$\sigma = 6.5$

68% of the data lies within 6.5 units of the mean

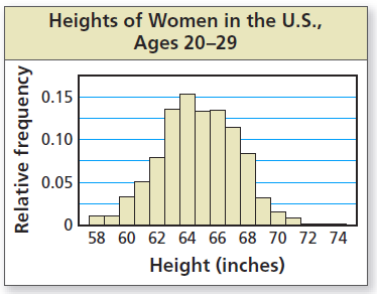
b. Give a list of data that would have a larger standard deviation than the given set. *(Do not calculate)*

Ex: 49, 49, 52, 53, 56, 62, 65, 70
(answers vary)

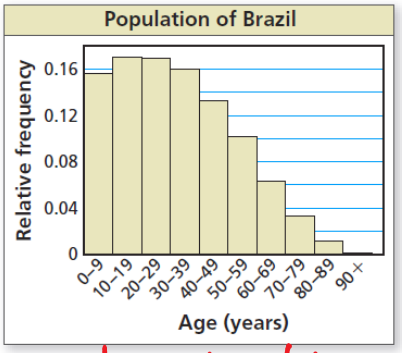
c. Give a list of data that would have a smaller standard deviation than the given set. *(Do not calculate)*

Ex: 50, 50, 52, 53, 56, 62, 65, 66
(answers vary)

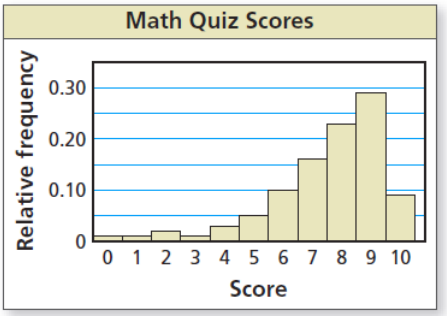
4. Which of the following has a normal distribution? What is the shape of the remaining two?



Normal



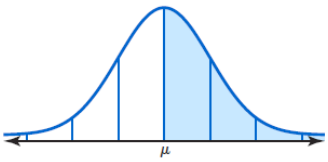
skewed right



skewed left

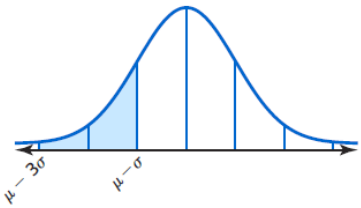
(5-8) Give the percent of the area under the normal curve represented by the shaded region.

5.



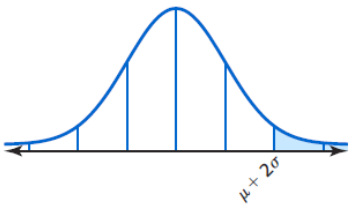
50%

6.



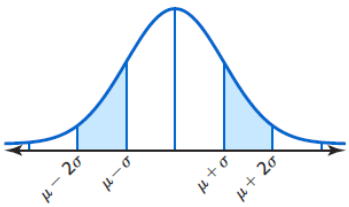
15.85%

7.



2.5%

8.



27%

9. *(a - f)* A normal distribution has a mean μ and a standard deviation σ . An x-value is randomly selected from the distribution. Find:

a. $P(x \leq \mu - \sigma)$

0.16

b. $P(x \geq \mu - \sigma)$

0.84

c. $P(x \geq \mu + 2\sigma)$

0.025

d. $P(x \leq \mu + \sigma)$

0.84

e. $P(\mu - \sigma \leq x \leq \mu + \sigma)$

0.68

f. $P(\mu - \sigma \leq x \leq \mu + 3\sigma)$

0.8385

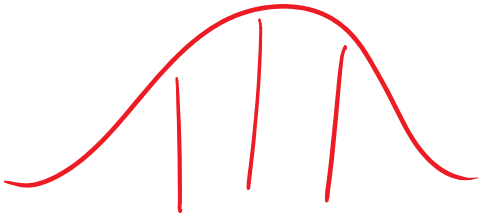
10. A normal distribution has a mean of 33 and a standard deviation of 4. Find the probability that a randomly selected x-value from the distribution is in the given interval:

a. between 29 and 37 .68

b. between 33 and 45 0.4985

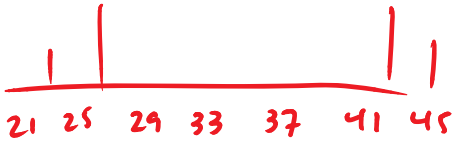
c. at least 25 0.975

d. at least 29 0.84



e. at most 37 0.84

f. at most 21 .0015



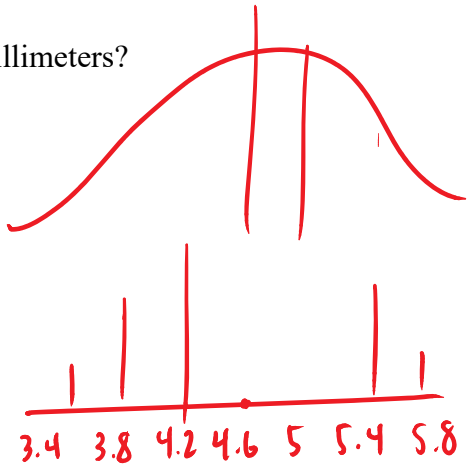
11. The wing lengths of houseflies are normally distributed with a mean of 4.6 millimeters and a standard deviation of 0.4 millimeters.

a. About what percent of houseflies have wing lengths between 3.8 millimeters and 5.0 millimeters?

81.5%

b. About what percent of houseflies have wing lengths that are longer than 5.8 millimeters?

.15%



c. About what percent of houseflies have wing lengths that are shorter than 5.4?

100 − 2.35 − .15 = 97.5%