

(1) The seniority levels of the 20 workers at the Dubuque branch of ACME Piston & Valve are as follows:

0 0 1 1 1 2 4 5 5 6 7 8 10 10 14 15 15 21 23 32

Draw the Stemplot

0
1
2
3

Draw the Frequency histogram

0 10 20 30 40

Complete the table and draw the density histogram

class freq. rel freq (%)

0-10
10-20
20-40

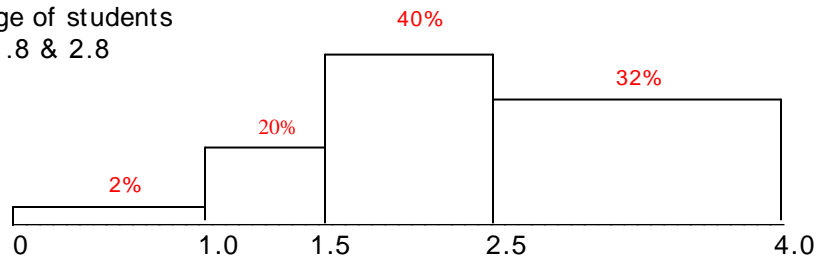
0 10 20 40

(2) Draw the density histogram for the daily high temperatures recorded in Tempe during May.

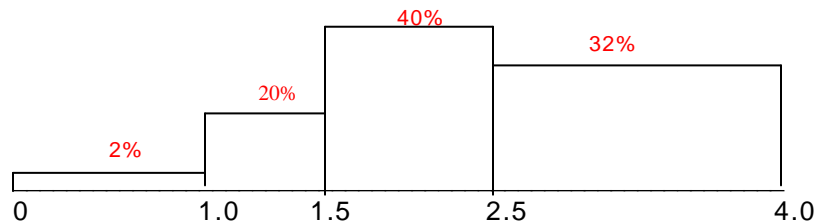
5 2 5 8 8
6 0 0 1 3 7 8 8
7 0 1 2 2 5 8 9 9 9
8 2 4 5 5 7 8 8
9 0 0 1 1

50 60 72 92

Estimate the percentage of students with GPA's between 1.8 & 2.8



Estimate the median.



(1) The ages of the 13 children living on Broome Street:

5 5 8 9 11 12 14 14 14 15 16 16 17

	NOW	5 years from now	2 years ago
average age			
median age			
first quartile			
third quartile			
std. deviation			

(2) Complete the table. $\text{standard value} = \frac{\text{value} - \text{average}}{SD}$

value	5	5	8	9	11	12	14	14	14	15	16	16	17
Std value													

(3) Compute the SD for the three data sets

(a) 2 4 5 6 8

(b) 0 0 5 10 10

(c) 5 5 5 5 5

(4) Standardize the values in (3a) and find the average & std. deviation of those numbers.

(5) The average age of the 12 members of *omega-lambda-delta* is 32, the average age of the 18 members of *gamma-gamma-gamma* is 20. Find the average age of all 30 students.

A linear transformation of data results from multiplying each value in a data set by the same number and/or adding the same number to each value.

$$\text{new value} = a(\text{old value}) + b$$

Effect of a linear transformation

2 2 5 6 10

avr =
med =
SD =
range =

$$\text{new value} = 3(\text{old value}) + 5$$

11 11 20 23 35

avr =
med =
SD =
range =

Mound shaped (normal) histograms (68-95-99.7 rule)

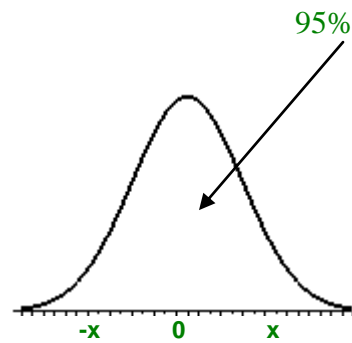
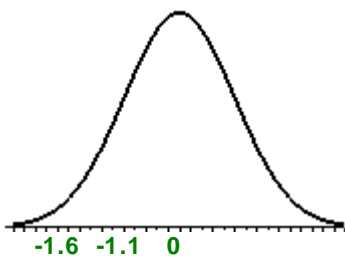
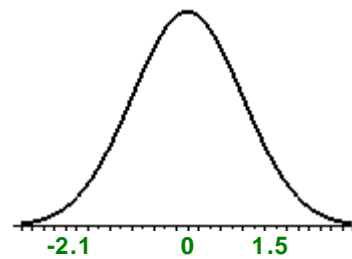
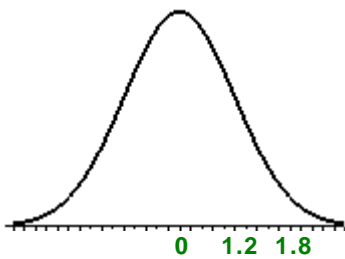
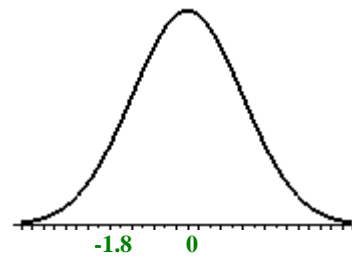
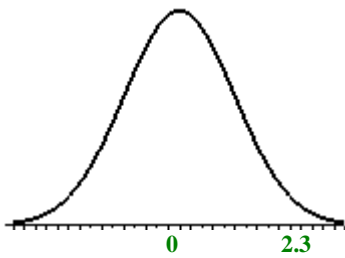
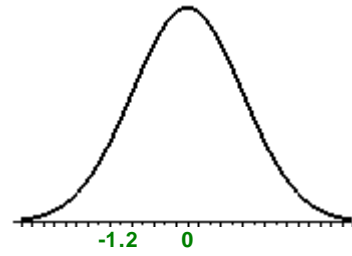
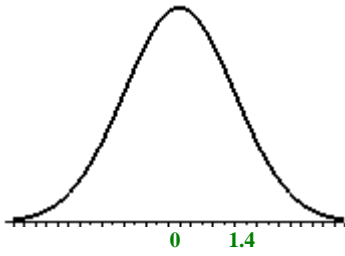
mustang mpgs
SD = 1.4

P&V ages
SD = 8



about **68%** of data values are within 1 SD's of the average
95% of data values are within 2 SD's of the average
99.7% of data values are within 3 SD's of the average

- (1) approximately 68% of mustangs get between ___ & ___ mpg
approximately 68% of P&V workers are between ___ & ___ years old.
- (2) approximately 95% of mustangs get between ___ & ___ mpg
approximately 95% of P&V workers are between ___ & ___ years old.
- (3) approximately 99.7% of mustangs get between ___ & ___ mpg
approximately 99.7% of P&V workers are between ___ & ___ years old.



Find x

Golf scores in a recent tournament were approximately normally distributed with average = 85 (strokes) and SD = 5 (strokes).

Coffee prices are approximately normally distributed with average = 74 (cents) and SD = 10 (cents).

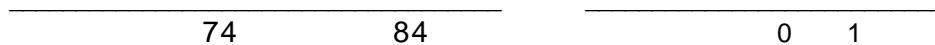
(1) What percentage of golfers shot over 90 ?

std. normal
curve



(2) What percentage of restaurants charge more than 84 cents for a cup of coffee?

std. normal
curve



(3) What percentage of golfers shot between 79 and 94 ?

(4) What percentage of restaurants charge between 62 and 92 cents for a cup of coffee?

(5) To win a ribbon, a golfer must shoot in the lower 10%. How low a score is needed ?

(6) To be among the least expensive 10%, a restaurant must charge no more than ___?___ for a cup of coffee.

The breaking strengths of steel rods are approximately normally distributed with average = 2000 lbs. and SD = 80 lbs.

- (1) What percentage of rods have a breaking strength below 2100 lbs. ?

- (2) What percentage of rods have a breaking strength above 1980 lbs. ?

- (3) What percentage of rods have a breaking strength between 1980 & 2100 lbs. ?

- (4) What percentage of rods have a breaking strength between 2100 & 2160 lbs. ?

- (5) How strong must a rod be, in order to be among the 5% strongest ?

- (6) How weak must a rod be, in order to be among the 2.5% weakest ?