

HEIGHT

Solve.....Using the graph.

Determine

1. What is the average height of the class in inches?
2. What is this value in meters?
3. What is this value in yards?
4. What is this value in feet?

Interpret

5. How many students are within one inch of the average?
6. Concerning the above question, what is the distance in inches between these various points and determine the linear equations and intercepts?
7. How many students height 5.2 feet?
8. How many students height 1.8 meters?
9. How many students height between 1.6 and 1.7 yards?
10. Convert the total average feet into feet and inches. What is this value?

The scientific method

The purpose of this exercise is to introduce non-science majors to the scientific process. Scientist follows a particular pattern of discovery called the scientific method.

1. Observation and description of a phenomenon.
2. Formulation of a hypothesis to explain the phenomena.
3. Use of the hypothesis to predict the existence of other phenomena, or to predict quantitatively the results of new observations.
4. Performance of experimental tests of the predictions by several independent experimenters and properly performed experiments. If the experiments bear out the hypothesis it may come to be regarded as a theory or law of nature. If the experiments do not bear out the hypothesis, it must be rejected or modified.

In this exercise you will use general data taken from your class and use it to provide you an opportunity to experience for yourself what is a scientist and what they do. You should know scientist investigate and discover things, but how? By, using the four steps listed above. They observe, come up with an idea-hypothesis, make predictions, and perform experiments. So, too you yourself observe things when you walk into class. You look for a seat and notice how many people may be in the class. While sitting surely you come up with some ideas and make predictions, and you might even perform experiments to see if certain people are friendly.

Here we have certain formulized ideas-hypothesis concerning height and weight distributions of an average person in a given crowd such as the classroom. The experiment we used was a survey to collect raw data. Now you must with the help of Excel organize the data and interpret the results to determine if our ideas are accurate.

The raw data will be converted into a graph and used as a visual aid and this graph **MUST** be used to **SHOW** where the graph **SUPPORTS** certain **RESULTS**, **PREDICTIONS**, and **INTERPRETATIONS**.

EXPERIMENTAL DATA

	Height
1	6ft
2	5'6"
3	5'4"
4	5'4"
5	6'4"
6	5'11"
7	5'11"
8	5'6"
9	5'5 1/2"
10	5'7"
11	5'0"
12	5'7 1/2"
13	5'5"
14	5'4"
15	5'11"
16	5'4"
17	5'6"
18	5'4 1/2"
19	5'8"
20	5'6"
21	5'11"
22	5'11"
23	5'6"
24	5'11"
25	5'1"
26	6ft
27	5'10"
28	5'10"
29	5'10"
30	5'6"
31	5'7"
32	5'9"
33	5'10"
34	5'10"
35	5'11"
36	5'9"
37	5'8"
38	5'7"
39	5'8"
40	5'2"
41	6'0"
42	5'10"
43	5'7"
44	5'9"

	Height
45	6'6"
46	5'12"
47	5'
48	5'7"
49	5'7"
50	5'3"
51	6'3"
52	5'4"
53	6'4"
54	5'
55	6'0"
56	
57	
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Columns

F	G
	Meters
1	G1 → TITLE
33	G2 → = (?)
32	0 INSERT
31	0 CONVERSION
30	0 FORMULA
1	0 CONVERTING
5	1.651003 COLUMN E
29	1.676403 INCHES INTO
28	0 COLUMN G
0	0 METERS.
26	1.752604 USING
6	0
4	1.803404 1M = 39.37 IN
24	1.828604 ENTER
3	0 FORMULA
22	1.879604 COPY, PASTE
22	0 G3... G19
22	0 G21 → ENTER
319	0.550334 = (G30 / 39.37)

To FIND
AVERAGE

H
Yards
H1 → TITLE
H2 → = (?)
0 INSERT
0 CONVERSION
0 FORMULA
0 CONVERTING
1.816104 COLUMN G
1.844044 METERS INTO
0 COLUMN H
0
0 YARDS.
0 USING
1.927864
1.983744 1M = 1.1 Yd
2.011684 ENTER
0 FORMULA
2.067564 COPY, PASTE
0 H3... H19
0
H21 → ENTER
0.605368 = (H21 * 1.1)

To FIND
AVERAGE

I
Feet
I1 → TITLE
I2 → = (?)
0 INSERT
0 CONVERSION
0 FORMULA
0 CONVERTING
5.448311 COLUMN H
5.532131 YARDS INTO
0 COLUMN I
0 FEET.
0 USING
5.783592
5.951232 1Yd = 3 FT
6.035052 ENTER
0 FORMULA
6.202692 COPY, PASTE
0 I3... I19
0
I21 → ENTER
1.816104 = (I21 * 3)

To FIND
AVERAGE

F2 → =COUNTIF(D2:D56,E2)
 F2 → HOME, COPY
 F3... F19
 HOME, PASTE
 F21 → FORMULAS
 INSERT FUNCTION
 SUM, OK
 F2... F19, OK

Graph Instructions

Starting From: HIGHLIGHT-----→ E1:F19
INSERT
 CHART
 CHART TYPE: Line /w Markers
 DATA: Select Data
Datarange (should be inserted via highlight command)
 E1:F19 or formula =sheet1!\$E\$1:\$F\$19
NEXT
DESIGN
 Chart Styles (choose Black to prevent coloring)
LAYOUT (Labels)
 CHART TITLE: above chart: Height Distribution
 Horizontal AXIS: below axis: Height-in
 Vertical AXIS: rotated title: Students
GRIDLINES
 Horizontal AXIS
 NONE
LEGEND
 NONE
TRENDLINE
 More Options
 POLYNOMINAL (2)
 CLOSE

To View or Print graph

Place pointer in the graph but away from box area and left click

FILE

 PRINT PREVIEW or PRINT

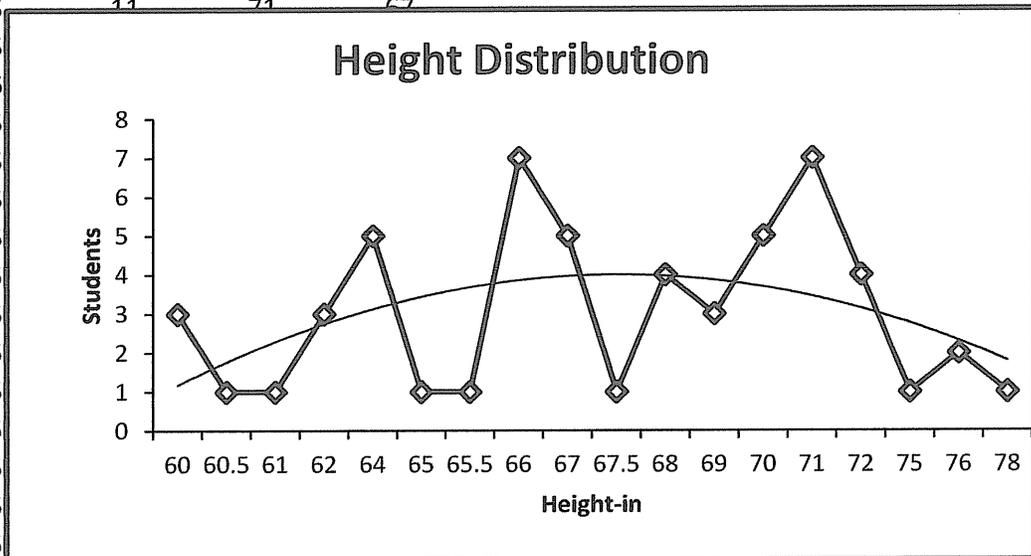
To View or Print worksheet

Place pointer away from the graph and left click on the worksheet

FILE

 PRINT PREVIEW or PRINT

Height-ft	Height-in	Inches	Sorted	Meters	Yards	Feet	
1	0	12	0	60	1 1.524003	1.676403	5.02921
5	1	61	60	60.5	0 1.536703	1.690373	5.07112
5	4	64	0	0	6 0	0	0
1	4	16	0	62	2 1.574803	1.732283	5.19685
6	0	72	61	64	3 1.625603	1.788164	5.364491
5	9	69	0	0	4 0	0	0
4	11	59	62	0	3 0	0	0
3	6	42	62	66	7 1.676403	1.844044	5.532131
2	0	24	0	0	3 0	0	0
4	7	55	64	0	2 0	0	0
5	0	60	0	68	4 1.727203	1.899924	5.699771
8	0	96	64	69	3 1.752604	1.927864	5.783592
5	0	60	64	70	5 1.778004	1.955804	5.867412
2	0	24	0	0	1 0	0	0
5	0	60	65.5	72	4 1.828804	2.011684	6.035052
1	0	12	66	0	0 0	0	0
5	6	66	66	76	2 1.930404	2.123444	6.370333
2	0.5	24.5	66	78	1 1.981204	2.179324	6.537973
5	8	68	66				
4	6	54	66		51 1.49283	1.642113	4.92634
5	11	71	66				
3	11	47	66				
5	6	66	67				
5	11	71	67				



5	8	68	70
5	0	0	70
6	0	72	71
5	10	70	71
3	0	0	71
5	9	69	71

58.77273

Height Distribution

