



REORDER ONLINE
www.ScantronStore.com

FOR USE ON
TEST SCORING
MACHINE ONLY

SCANTRON®
FORM NO. 882-E

IMPORTANT

USE NO. 2 PENCIL ONLY

- MAKE DARK MARKS
- ERASE COMPLETELY TO CHANGE
- EXAMPLE: A B C D E

TO USE SUBJECTIVE SCORE FEATURE:

- Mark total possible subjective points
- Only one mark per line on key
- 153 points maximum

EXAMPLE OF STUDENT SCORE:

400	300	200	100	1
400	400	300	400	2
400	400	400	400	5
400	400	400	400	1
400	400	400	400	2
400	400	400	400	5

15

TEST RECORD	
PART 1	
PART 2	
TOTAL	

NAME	Exam 1
SUBJECT	
DATE	
TEST NO.	B
PERIOD	

SUBJECTIVE SCORE INSTRUCTOR USE ONLY

100	90	80	70	60
50	40	30	20	10
9	8	7	6	5
4	3	2	1	0

KEY

1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E
14	A	B	C	D	E
15	A	B	C	D	E
16	A	B	C	D	E
17	A	B	C	D	E
18	A	B	C	D	E
19	A	B	C	D	E
20	A	B	C	D	E
21	A	B	C	D	E
22	A	B	C	D	E
23	A	B	C	D	E
24	A	B	C	D	E
25	A	B	C	D	E
26	A	B	C	D	E
27	A	B	C	D	E
28	A	B	C	D	E
29	A	B	C	D	E
30	A	B	C	D	E
31	A	B	C	D	E
32	A	B	C	D	E
33	A	B	C	D	E
34	A	B	C	D	E
35	A	B	C	D	E
36	A	B	C	D	E
37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E
40	A	B	C	D	E
41	A	B	C	D	E
42	A	B	C	D	E
43	A	B	C	D	E
44	A	B	C	D	E
45	A	B	C	D	E
46	A	B	C	D	E
47	A	B	C	D	E
48	A	B	C	D	E
49	A	B	C	D	E
50	A	B	C	D	E

FEED THIS DIRECTION

Customer Service
1-800-SCANTRON

© 2010 Scantron Corporation. ALL RIGHTS RESERVED.
(U.S. PAT. NO. 7,268,861 B2)

SCANTRON® EN-882-E-4:19

For problems 1-3, use the frequency distribution shown below.

FEMALE HEIGHTS (IN INCHES)	FREQUENCY
53-56	3
57-60	2
61-64	4
65-68	4

1. (6 POINTS) Use the frequency distribution of the sample of female heights to find the mean female height.

Female Heights (inches)	Frequency (f)	Midpoint (x)	f · x
53-56	3	54.5	163.5
57-60	2	58.5	117.0
61-64	4	62.5	250.0
65-68	4	66.5	266.0
Sum	13		796.5

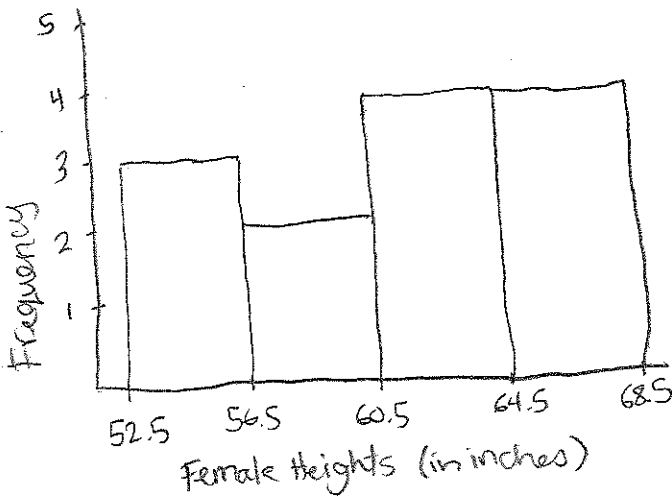
$$\bar{x} = \frac{\sum f \cdot x}{\sum f}$$

$$\bar{x} = \frac{796.5}{13}$$

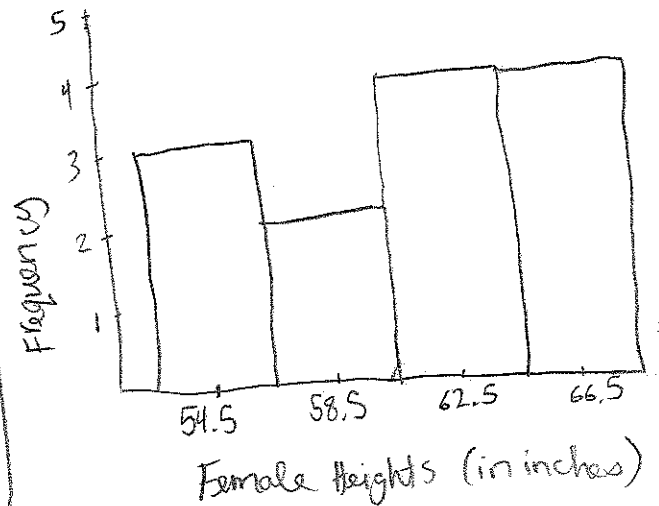
$$\bar{x} \approx 61.3 \text{ inches}$$

2. (6 POINTS) Make a histogram of the sample of female heights.

(Class boundaries)



(Midpoints)



3. (2 POINTS) Is this data normally distributed? Explain.

No. The frequencies do not have a bell-shape—they start high and end high.

For problems 4-12, use the sample data representing ages of voters (in years) given below. Be sure to include the units. You may use the STAT feature of your calculator for numbers 4-6.

~~43~~ ~~56~~ ~~28~~ ~~63~~ ~~67~~ ~~66~~ ~~52~~ ~~48~~ ~~37~~ ~~51~~ ~~40~~ ~~60~~ ~~62~~
~~66~~ ~~45~~ ~~21~~ ~~35~~ ~~49~~ ~~32~~ ~~53~~ ~~61~~ ~~53~~ ~~69~~ ~~31~~ ~~48~~ ~~59~~

Sorted data

2	18
3	1257
4	035889
5	123369
6	01236679

4. (2 POINTS) Find the mean.

$\bar{x} \approx 49.8$ years

5. (2 POINTS) Find the standard deviation.

$s \approx 13.3$ years

6. (2 POINTS) Find the variance.

$s^2 \approx 176.9$ yr²

7. (2 POINTS) Find the mode.

48 years, 53 years, 66 years

8. (2 POINTS) Find the minimum and maximum usual values.

Min: $\bar{x} - 2s = 49.8 - 2(13.3) = 23.2$ years

Max: $\bar{x} + 2s = 49.8 + 2(13.3) = 76.4$ years

9. (6 POINTS) Find the

a. First quartile

$Q_1 = 40$ years

b. Median

$\bar{x} = \frac{51+52}{2} = 51.5$ years

c. Third quartile

$Q_3 = 61$ years

10. (2 POINTS) What is the inner quartile range (IQR)?

$IQR = Q_3 - Q_1 = 61 - 40 = 21$ years

11. (2 POINTS) Are there any outliers? Show all work.

$Q_1 - 1.5 \cdot IQR = 40 - 1.5(21) = 8.5$ years

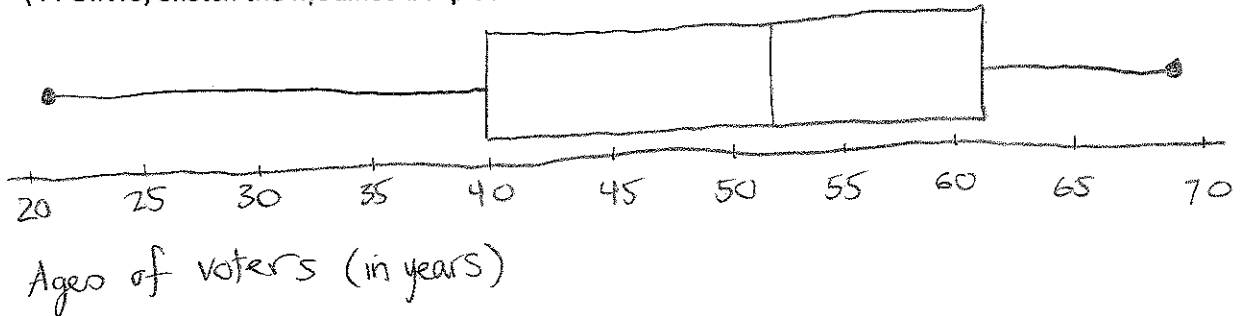
$Q_3 + 1.5 \cdot IQR = 61 + 1.5(21) = 92.5$ years

NO OUTLIERS

12. (5 POINTS) Give the 5-number summary for the modified boxplot.

21 yrs, 40 years, 51.5 years, 61 years, 69 years

13. (4 POINTS) Sketch the modified boxplot.



14. (2 POINTS) What is the best measure of center? Explain.

Since the data is skewed left, the median is likely the best measure of center.