

AP Stats HW 1.1A 1, 3, 5, 7, 8

- ① type: Yellow Poplar Pine Cedar (C)  
repellent: solvent, water (C)  
~~texture~~  
Paint thickness: mm (Q)  
color (C)  
Time: months (Q)

③ a) Indiv: AP Students

- b) Q: Hght (in), HW (mm), coins (\$)   
C: gender, hand, music

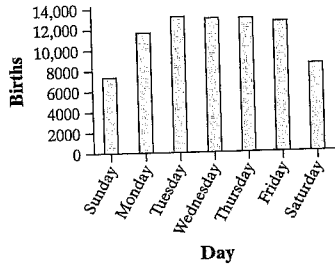
c) female, R-hand, 58" tall, 60 mm HW, alt. music, .76

- ⑤ Q. grad rate, % male  
C. major, ethnicity

⑦ b

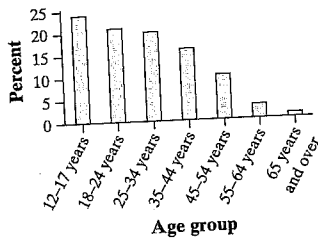
⑧ c

11) 11. (a) A pie chart would also be appropriate since all days are accounted for in the data set. A bar graph is given below.



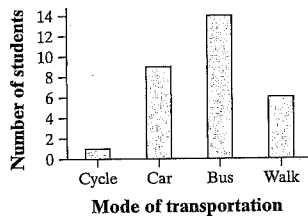
13) 65% Mexican  
9% Puerto Rican

15) 15. (a) The given percents represent fractions of different age groups rather than parts of a single whole. (b) A bar graph is given below.



17) pictures are not proportional

17. (a) The pictures should be proportional to the number of students they represent. (b) A bar graph is given below.



AP Stats HW

sec. 1.1 C 19, 21, 23, 25, 27-32

(19)

	H	S	L	Tot.
Buy	20	7	9	36
Non	29	25	43	97
Tot.	49	32	52	133

a) 133 total. 36 buyers

b)  $\frac{49}{133} = 36.8\%$  Higher  
 $\frac{32}{133} = 24.1\%$  Same  
 $\frac{52}{133} = 39.1\%$  Lower  
 } 60.9% said same or higher

(21)

\* make cond.

	H	S	L	Tot.
Buy	56%	19%	25%	100%
Non	30%	26%	44%	100%
Tot.	37%	24%	39%	100%

	H	S	L	Tot.
Buy				
Non				

buyers more likely to consider recycled filters higher in quality

(23)

Amer. Like white  
 Eur. Like silver

(25)

	N	Y	T
Neu.	29%	14%	43%
Ret	33%	5%	38%
Own	18%	1%	19%
T	80%	20%	100%

Redo as Conditional Distribution to see association

	N	Y	T
Neu.	36%	70%	
Ret	41%	25%	
Own	23%	5%	
	100	100	100

This set up classifies everyone based on membership in Sierra Club

Yes - Association

of Members, 70% never used snowmobs. only 5% own one

(27)

"D" F: 2625 54%  
 M: 2252 46%  
 T: 4877

(28)

"B" Only Females out of all is marginal distribution of gender

(29)

90% of f. are certain  
 "D" 2625 1174  
 44.7%

(30)

"D" Only Females is conditional distribution of opinion among adolescents of a given gender

(31)

90% of certain are f.  
 "E" 1930 1174

1174 + 756 = 1930 = 60.8  
 is conditional distribution of gender among adol. of given opinion.

(32)

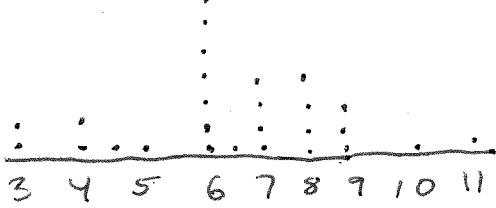
"C" Only Certain

A P Stats HW

1-2 D

37, 39, 41, 43, 45, 47

37



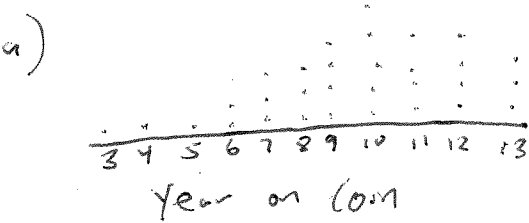
Center: 6 hours  
 shape: symmetric, bell shaped  
 Spread: range:  $11 - 3 = 8$  hours  
 outliers: none

29

a) Losing by 2 goals

b) Wins: 29 Loses: 2 ties: 3  
 the team was very good

41



b) Old coins taken out of circulation  
~~distribution~~, some still circulate

43

Internal External

Center: 21	17
shape: bell, sym.	bell, sym
spread: $30 - 13 = 17$	$24 - 5 = 19$
outlier: none	none

ratings appear higher for the Internal group

45

- a) the data is displayed better when split. otherwise, it would be too clustered together
- b) highest: 16.0% , maybe Mormon's have lots of kids
- c) Center: 13.7%  
 shape: symm., bell shaped  
 Spread:  $16.0 - 11.4 = 4.6$   
 outliers: none

47

Not-split

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

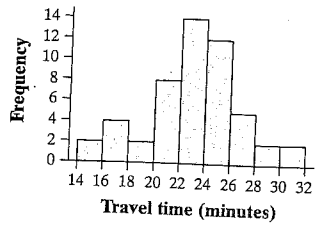
split

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

- a) split shows more details
- b) Center: 7.80  
 Shape: sym. bell shaped  
 Spread:  $9.57 - 6.04 = 3.53$   
 outliers: none
- c) Reduces Monsoon rains below Ave. in 18 of 23 el niño years

53 a)

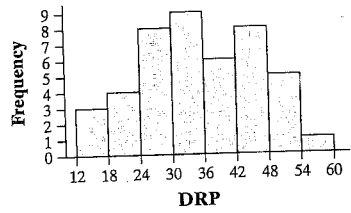
53. (a) The graph is given below.



b) Center: 23 min  
 Shape: bell shaped, symm.  
 Spread:  $30.9 - 15.5 = 15.4$  min  
 Outliers: None

55

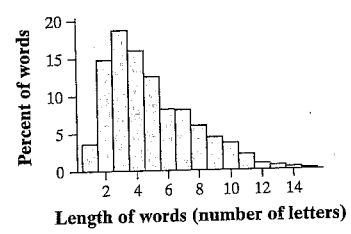
55. The graph is given below.



Center: 35 ~~DRP~~  
 Shape: Bell shaped, slightly skewed Left.  
 Spread:  $59 - 19 = 40$  ~~DRP~~  
 Outliers: None

57. (a) The histogram is below. The distribution is skewed to the right with a single peak. The center is at 4 letters, with a range of  $15 - 1 = 14$  letters. There are no gaps or outliers.

57



Center: 4 letters  
 Shape: Bell, skewed Right  
 Spread:  $15 - 1 = 14$  letters  
 Outliers: None

59 scales not the same

60

	York	Phil.
Center	4 to 8 mil.	0 to 4 mil.
Shape	Skewed Right	Skewed Right
Spread	36 mil.	16 mil.
Outliers	Yes, <del>60</del> around 35 mil.	None

- 69 a
- 70 d
- 71 c
- 72 b
- 73 b
- 74 d

AP Stats HW 1-3 F 79, 81, 83, 87, 89,

(79) mean: 85. it means that if his score on each of the 14 quizzes were the same, it would be 85

(91) 74 75 78 78 80 82 84 86 87 90 91 93 96 98  
Median: 85  $\frac{1}{2}$  lower,  $\frac{1}{2}$  higher

(83) Median: 48,097 Mean: 60,954 This would be skewed right  
Mean pulled up by high incomes

(87) a: Median: 6, found between point +250 +251  
Mean:  $2(10) + 3(40) + 4(42) + 5(60) + 6(105) + \dots = 3500$

b: Median, shorter and makes your point  $\frac{3500}{500} = 7$

(89) Min: ~~74~~ 74  
Q<sub>1</sub>: 78  
Med: 85  
Q<sub>3</sub>: 91  
Max: 98

$$IQR = 91 - 78 = 13$$

$$1.5(IQR) = 1.5(13) = 19.5$$

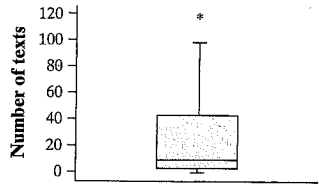
$$Q_3 + 1.5(IQR) = 91 + 19.5 = 110.5 \text{ none over}$$

$$Q_1 - 1.5(IQR) = 78 - 19.5 = 58.5 \text{ none under}$$

no outliers

(91)

91. (a) The boxplot is shown below.



b)  $\frac{1742}{30} = 58$  texts per day

$\frac{21}{25}$  sent fewer than this amount  
the article's ave seems too high

(93)

- a) 75% text more than call, this supports the claim
- b) No, not a random sample, lack of diversity in sample

(95)

- a) stocks: 3% <sup>-3.5 to</sup> Real: 1% <sup>-5 to</sup>
- b) Both vary close to zero
- c) Spread: stock fund has range of 7.5% while real estate has 1.5%

(97)

$\bar{x} = 5.4$      $n = 6$      $n - 1 = 5$

data	$d - \bar{x}$	Sq.
5.6	.2	.04
5.2	-.2	.04
4.6	-.8	.64
4.9	-.5	.25
5.7	.3	.09
6.4	1	1

Sum: 2.06

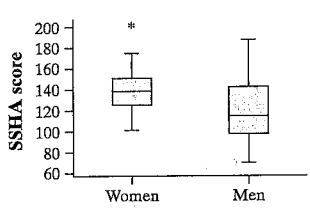
Variance: .343  
 $\sigma_x = \sqrt{\frac{2.06}{6}} = .586$   
 $S_x = \sqrt{\frac{2.06}{5}} = .642$

The ave. difference from the mean of 5.4 is .642.

(103)

- a) 1 1 1 1
- b) 0 0 10 10
- c) Yes, a must be some #, ~~no~~  
 NO, b must be 0 0 10 10 for  $\bar{x} = 5$  and  $d = 5$

(105)



	n	$\bar{x}$	$S_x$	Min	Q1	Med	Q3	Max
W	18	141.06	26.44	101	126	138.5	154	200
M	20	121.25	32.85	70	98	114.5	143	187

Data appear to show women have better study habits  
 Women have higher mean, median and lower  $S_x$

Variable	N	Mean	StDev	Minimum
Women	18	141.06	26.44	101.00
Men	20	121.25	32.85	70.00

Variable	Q1	Median	Q3	Maximum
Women	126.00	138.50	154.00	200.00
Men	98.00	114.50	143.00	187.00

(107) d

(109) a

(108) b

(110) a

# AP Stats : CH 1 AP Practice Test

① D

② E

③ B US, Japan, Germ.

④ L 4.5 5.2 5.5 6.0 8.7 8.9 H H  
B ↑ Median

⑤

0-10	60	total: 139
10-20	40	
20-30	20	
30-40	5	

$\frac{60}{139} = 43.2\%$

⑥ C

$Q_1$  is between 0-10  
 $Q_3$  is between 20-30  
IQR of 35 impossible

⑦  $50(.75) = 37.5$   $Q_3$  is between data values 38 + 39  
this is #44

⑧ C

⑨ E  $125 + 81 + 40 = 246$   $246/600 = 62.5\%$

⑩ B

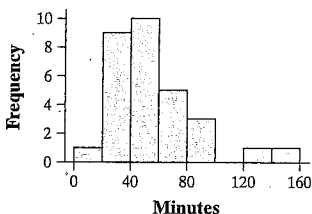
⑪ D - not true

⑫ other page



Ch 8 Proc. AP

12) a)



b)  $Q_1 = 30$   
Med =

$Q_3 = 77$

$IQR = 77 - 30 = 47$

$30 - 1.5(47) = -40.5$

$77 + 1.5(47) = 147.5$

Since 151 is over 147.5 it's an outlier

c) Data skewed right, therefore use Median & IQR

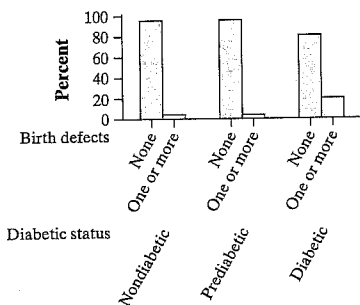
13) a)

	Non	Pre	Di	Total
None	754	362	38	1154
1 >	31	13	9	53
total	785	375	47	1207

b)

	Non	Pre	Dia	Total
None	96.1%	96.5%	80.9%	95.6%
1 >	3.9%	3.5%	19.1%	4.39%
Total	100%	100%	100%	100%

c)



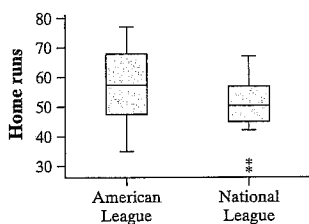
d) Yes, there appears to be an assoc. Diabetics appear to have children with birth defects at a higher rate

14)

- a) 550 - 559 hours
- b) X had a higher min and a higher max
- c) Y had a higher median

15)

T1.15 Given below are side-by-side boxplots and descriptive statistics for both the American League and the National League.



Variable	N	Mean	StDev	Minimum	Q1	Median	Q3	Maximum
American League	14	56.93	12.69	35.00	49.00	57.50	68.00	77.00
National League	14	50.14	11.13	29.00	46.00	50.50	55.00	67.00

The data suggest that the number of home runs is somewhat less in the National League. All five numbers in the five-number summary and the mean are less for the National League teams than for the American League teams. However, there is more variability among the American League teams, with a standard deviation of 12.69, compared to 11.13 for the National League. Both distributions are reasonably symmetric. The American League has no outliers, while the teams that hit 29 and 31 home runs are outliers in the National League.