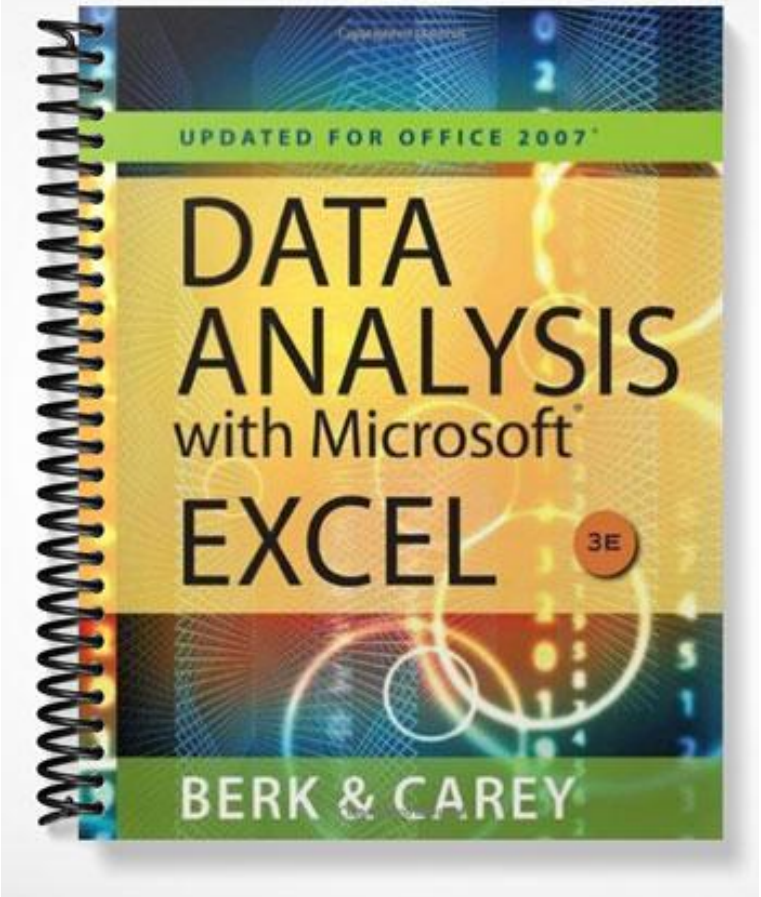
SOLUTIONS MANUAL



Instructor's Solutions Manual

for

Data Analysis with Microsoft Excel

Updated for Office 2007

3rd EDITION

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Chapter 1: *Getting Started with Excel*

There are no exercises for Chapter 1.

Chapter 2: *Working with Data*

1.

b. The AVER00_06 column appears follows:

Aver00_06
15.429
4.571
5.857
65.000
22.429
3.714
16.143
19.714
7.429
11.143
41.714
27.143
19.429
6.429

c. The DIFF06_80 column appears:

Diff06_80
-103.571
-28.429
-29.143
-155.000
-29.571
-4.286
-17.857
-18.286
-5.571
-7.857
21.714
17.143
12.429
4.429

d. The only cities that showed an increase in the number of healthy days are:

City	Diff06_80
Pittsburgh	21.714
Houston	17.143
Atlanta	12.429
SanFrancisco	4.429

e. The RATIO06_80 column appears as:

City	Ratio06_80
New York	12.97%
Seattle	13.85%
Denver	16.73%
Los Angeles	29.55%
Philadelphia	43.13%
Boston	46.43%
Chicago	47.48%
Washington DC	51.88%
Kansas City	57.14%
Dallas	58.65%
Pittsburgh	208.57%
Houston	271.43%
Atlanta	277.55%
SanFrancisco	321.43%

f. See previous table.

g. San Francisco

h. Select the cell range and then click the **Create from Selection** command from the Defined Names group on the Formulas tab.

i. Ten of the fourteen cities experienced a decline in pollutions days between 1980 and the average of the years from 2000 to 2006. The greatest decline in absolute number of days occurred for Los Angeles, while the greatest decline in terms of ratio occurred for New York. San Francisco showed the largest percentage increase but that statistics is misleading since San Francisco had such few pollutions days in 1980 with 2 that almost any increase in days would appear as a large percentage increase.

Any conclusions from this analysis should be viewed with caution since this is a small sample and there may be a problem with comparing a single year's data from the 1980's with an average of 7 years of data in the 2000's. The 1980 data is bound to be more variable and subject to random fluctuations than the average of 7 years of data.

2.

c. The sorted table appears as follows:

Brand	Cases2000	Cases2001	Cases2002	Origin	Diff02_00	Ratio02_00
7 UP	276.00	261.60	243.40	1929	-32.60	0.882
Sprite	713.90	703.30	687.90	1961	-26.00	0.964
Tropicana	301.20	307.70	292.90	1954	-8.30	0.972
Pepsi	2188.00	2163.90	2156.40	1898	-31.60	0.986
Dr Pepper	747.40	740.00	737.40	1885	-10.00	0.987
Coca-Cola	3198.00	3189.60	3288.90	1886	90.90	1.028
Mountain Dew	810.30	853.70	862.70	1946	52.40	1.065
Gatorade	355.80	375.00	422.80	1965	67.00	1.188
Minute Maid	218.00	226.50	285.30	1946	67.30	1.309
Aquafina	105.00	151.40	203.00	1994	98.00	1.933

d. If we divide the soft drinks into two groups: those which originated prior to 1940 and those that originated after 1940; 3 of the 4 "older" soft drinks showed a decrease in sales while 2 of the 6 "younger" soft drinks showed a sales decrease. So it's possible that the older brands are showing more of a tendency to a sales decrease. However this is not always true. The youngest brand, Aquafina showed the greatest increase (98) but that was nearly matched by one of the oldest, Coca-Cola, with an increase of 90.9 units.

e. Using the ratio of sales does not quantitative change the result though the increase in sales of Coca-Cola is not as striking 1.028) since it's base sales in 2000 are so high to begin with.

3.

b. The difference and ratio values are:

University	Graduated	White Males	Black Males	White Females	Black Females	Diff	Ratio
ILL	81	70	52	77	83	-11	0.864
IND	72	61	45	76	82	-11	0.847
IOWA	66	61	51	81	50	-5	0.924
MICH	86	79	44	88	67	-7	0.919
MSU	72	61	33	87	63	-11	0.847
MINN	58	63	39	70	56	5	1.086
NU	93	87	79	94	100	-6	0.935
OSU	66	60	42	77	83	-6	0.909
PSU	84	76	69	91	93	-8	0.905
PU	67	66	48	84	80	-1	0.985
WIS	77	65	50	79	64	-12	0.844

c. The difference and ratio values are:

University	Diff_WF_Overall	Ratio_WF_Overall
ILL	-4	0.951
IND	4	1.056
IOWA	15	1.227
MICH	2	1.023
MSU	15	1.208
MINN	12	1.207
NU	1	1.011
OSU	11	1.167
PSU	7	1.083
PU	17	1.254
WIS	2	1.026

d. Only Illinois has a negative difference between the white female to overall graduation rate

e. Here are the sorted values

University	Diff_WF_Overall	Ratio_WF_Overall
PU	17	1.254
IOWA	15	1.227
MSU	15	1.208
MINN	12	1.207
OSU	11	1.167
PSU	7	1.083
IND	4	1.056
WIS	2	1.026
MICH	2	1.023
NU	1	1.011
ILL	-4	0.951

4.

b. The ratio values are:

Firm	**Advertising Budget ($mil)**	**Retained Impressions per Week (mil)**	**Ratio**
Oscar Meyer	9.2	23.4	2.543
Calvin Klein	5.0	12.0	2.400
Crest	32.4	71.1	2.194
Coco-Cola	40.1	78.6	1.960
MCI	26.9	50.7	1.885
Shasta	5.7	10.0	1.754
Meow Mix	7.6	12.3	1.618
Levi's	27.0	40.8	1.511
Polaroid	26.9	38.0	1.413
Pepsi	74.1	99.6	1.344
Diet Coke	20.4	21.4	1.049
Fed'l Express	22.9	21.9	0.956
Burger King	82.4	60.8	0.738
Kibbles 'n Bits	6.1	4.4	0.721
Miller Lite	50.1	32.1	0.641
Stroh's	19.3	11.7	0.606
Wendy's	49.7	29.2	0.588
ATT/Bell	154.9	88.9	0.574
McDonald's	185.9	92.4	0.497
Ford	166.2	40.1	0.241
Bud Lite	45.6	10.4	0.228

c. Use the Create from Selection button on the Defined Groups from the Formulas tab.

d. See the answer for 4b) for the sorted values. Oscar Meyer showed the "greatest bang for the buck".

e. The firms with higher-than-average ratios are:

Firm	Advertising Budget ($mil)	Retained Impressions per Week (mil)	Ratio
Oscar Meyer	9.2	23.4	2.543
Calvin Klein	5.0	12.0	2.400
Crest	32.4	71.1	2.194
Coco-Cola	40.1	78.6	1.960
MCI	26.9	50.7	1.885
Shasta	5.7	10.0	1.754
Meow Mix	7.6	12.3	1.618
Levi's	27.0	40.8	1.511
Polaroid	26.9	38.0	1.413
Pepsi	74.1	99.6	1.344

5.

a. The first ten imported values are:

State	Pay	Spend
NJ	27170	5536
AK	41480	8349
WY	27224	5440
NY	30678	5710
CT	26610	4888
DE	24624	4517
MT	22482	3947
VT	20325	3554
MA	26800	4642
KA	22644	3914

b. The ten lowest ratio values are:

State	Pay	Spend	Ratio
NJ	27170	5536	4.908
AK	41480	8349	4.968
WY	27224	5440	5.004
NY	30678	5710	5.373
CT	26610	4888	5.444
DE	24624	4517	5.451
MT	22482	3947	5.696
VT	20325	3554	5.719
MA	26800	4642	5.773
KA	22644	3914	5.785

c. Use the Create from Selection command from the Defined Names group on the Formulas tab.

d. The ten highest ratio values are:

State	Pay	Spend	Ratio
UT	22341	2297	9.726
NV	25610	2932	8.735
AZ	24640	2829	8.710
TE	21800	2533	8.606
AL	22934	2729	8.404
ID	20969	2509	8.358
CA	29132	3608	8.074
MS	18443	2305	8.001
MI	30168	3782	7.977
OK	21419	2752	7.783

e. The filtered values are:

State	Pay	Spend	Ratio
NJ	27170	5536	4.908
AK	41480	8349	4.968
WY	27224	5440	5.004
NY	30678	5710	5.373
CT	26610	4888	5.444
DE	24624	4517	5.451
MT	22482	3947	5.696
VT	20325	3554	5.719
MA	26800	4642	5.773
KA	22644	3914	5.785
ME	19583	3346	5.853
FL	22250	3731	5.964

6.

b. Here are the values for the density of the eight chunks.

Mass	Volume	Density
9.94	3.6	2.761
18.19	6.6	2.756
13.58	5	2.716
9.19	3.4	2.703
12.86	4.8	2.679
12.98	5	2.596
10.38	4	2.595
8.11	7	1.159

c. See the table in 6b) for the sorted values.

d. The average density is 2.496.

e. The average density without the outlier is 2.687.

f. The second estimate is considered better because it is not influenced by the outlier.

7.

c. No other values are strictly increasing.

d. The values of the GNPPOP column are:

Year	GNPPOP
1947	$2.18
1948	$2.39
1949	$2.35
1950	$2.57
1951	$2.94
1952	$3.06
1953	$3.17
1954	$3.12
1955	$3.39
1956	$3.53
1957	$3.68
1958	$3.65
1959	$3.91
1960	$4.01
1961	$4.05
1962	$4.27

8.

c. The top ten players in terms of batting average are:

Name	AVG
Suzuki, Ichiro	0.333
Pujols, Albert	0.332
Helton, Todd	0.332
Guerrero, Vladimir	0.325
Holliday, Matt	0.319
Jeter, Derek	0.317
Garciaparra, Nomar	0.315
Cano, Robinson	0.314
Mauer, Joe	0.313
Cabrera, Miguel	0.313

d. The only players with a batting average of 0.310 or better are:

Name	AVG
Suzuki, Ichiro	0.33
Pujols, Albert	0.33
Helton, Todd	0.33
Guerrero, Vladimir	0.33
Holliday, Matt	0.32
Jeter, Derek	0.32
Garciaparra, Nomar	0.32
Cano, Robinson	0.31
Mauer, Joe	0.31
Cabrera, Miguel	0.31
Ramirez, Manny	0.31
Ramirez, Hanley	0.31
Ordonez, Magglio	0.31
Wright, David	0.31

g. The top ten players in terms of batting average per dollar are:

Name	BA/Salary
Pedroia, Dustin	0.787
Ramirez, Hanley	0.776
Kendrick, Howie	0.775
Ethier, Andre	0.761
Buck, Travis	0.758
Atkins, Garrett	0.755
Tulowitzki, Troy	0.745
Martin, Russell	0.743
Markakis, Nick	0.740
Taveras, Willy	0.729

h. The players with the highest batting average to salary ratios are the first, second and third year players. This is probably due to the fact that as players become more experienced, they are paid more based on their experience as well as their batting average. Union contracts will also play a part.

9.

b. Nevada has the lowest incidents of diabetes-related deaths; West Virginia has the highest. Arkansas has the lowest incidents of flu/pneumonia-related deaths; Iowa has the highest.

c. For diabetes-related deaths:

State	Diabetes	FluPneum
WV	44.6	29.6
LA	38.7	20.3
ND	33.3	29.8
OH	32.6	20.4
AR	32.4	33.8
NM	32.0	19.7
TN	31.8	31.1
DC	31.7	15.4
KY	31.5	25.1
AL	31.4	25.7
OK	31.4	27.0

For flu/pneumonia-related deaths:

State	Diabetes	FluPneum
IA	24.7	35.1
AR	32.4	33.8
MA	22.1	31.4
TN	31.8	31.1
ND	33.3	29.8
SD	26.6	29.7
WV	44.6	29.6
WY	27.5	28.9
MO	29.2	28.1
MT	28.4	27.9

d. The ten lowest ratio values are:

State	Diabetes	FluPneum	Ratio_dia_pneu
IA	24.7	35.1	70.37%
MA	22.1	31.4	70.38%
NV	13.4	18.3	73.22%
CT	19.1	24.7	77.33%
NY	22	27.8	79.14%
HI	16.1	18.8	85.64%
CA	20	23.1	86.58%
CO	15.6	17.8	87.64%
SD	26.6	29.7	89.56%
MS	23.6	26.3	89.73%

10.

c. 87

d. Dodge Viper

e. Chevrolet Corvette hatchback Z06 V8 MT

f. Toyota Prius

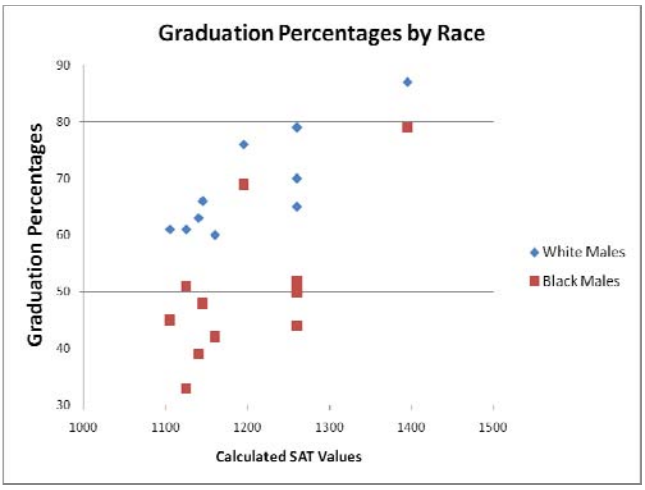
g. Lotus Elise

h. Most of the cars with low values are from the USA; Europe and Asia has the highest values. Most of the high value vehicles appear to be sports cars, roadsters, family sedans, and ultra or high-performance cars.

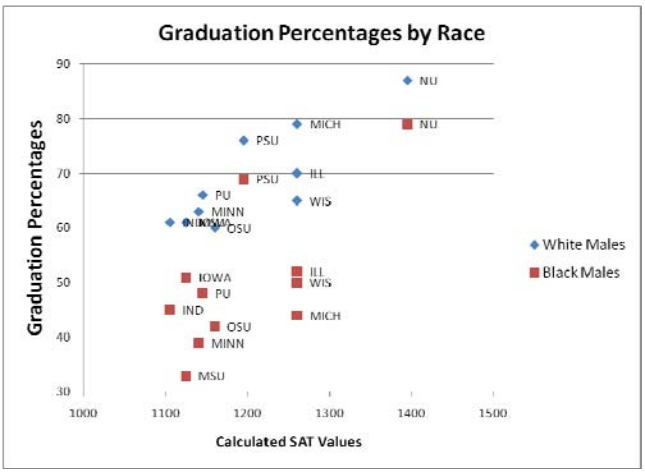
Chapter 3: *Working with Charts*

1.

c. The edited chart appears as follows:



d. The chart with labels appears as:



For every university the black male graduation rate appears lower.