



STATE OF MAINE
MAINE REVENUE SERVICES

PT103

Valuation of Real Estate

Sales Ratio Studies

August, 2020

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%		
2		M	06/09		\$172,000	\$106,600	62%		
3		M	12/09		\$165,000	\$102,300	62%		
4		R	02/09		\$174,500	\$118,700	68%		
5		R	03/09		\$232,500	\$165,100	71%		
6		R	02/09		\$199,000	\$143,300	72%		
7	1	M	10/09		\$162,000	\$119,900	74%		
8	2	R	09/09		\$145,000	\$107,300	74%		
9	3	M	06/09		\$159,000	\$119,200	75%		
10	4	R	08/09		\$205,000	\$157,800	77%		
11	5	R	01/09		\$158,900	\$122,400	77%		
12	6	M	02/09		\$150,000	\$115,500	77%		
13	7	M	05/09		\$148,000	\$117,700	80%		
14	8	R	05/09		\$215,000	\$174,200	81%		
15	9	R	09/09		\$178,000	\$146,000	82%		
16	10	R	11/09		\$209,900	\$176,300	84%		
17	11	R	03/09		\$150,000	\$126,000	84%		
18	12	R	04/09		\$167,500	\$142,400	85%		
19	13	M	07/09		\$138,500	\$120,500	87%		
20	14	R	04/09		\$239,000	\$207,900	87%		
21	15	M	11/09		\$145,000	\$127,600	88%		
22	16	R	10/09		\$244,000	\$219,600	90%		
23	17	R	03/09		\$177,700	\$159,900	90%		
24	18	M	08/09		\$142,000	\$129,200	91%		
25	19	R	02/09		\$180,000	\$163,800	91%		
26	20	R	07/09		\$224,500	\$206,500	92%		
27	21	M	05/09		\$135,000	\$126,900	94%		
28	22	R	10/09		\$149,000	\$140,000	94%		
29	23	R	01/09		\$192,500	\$182,900	95%		
30	24	M	11/09		\$139,900	\$132,900	95%		
31	25	R	05/09		\$136,500	\$129,700	95%		
32	26	R	08/09		\$188,000	\$184,200	98%		
33	27	M	04/09		\$147,000	\$145,500	99%		
34	28	M	04/09		\$132,600	\$132,700	100%		
35		R	07/09		\$184,500	\$188,200	102%		
36		R	12/09		\$156,600	\$164,400	105%		
37		M	10/09		\$139,000	\$150,100	108%		
38		R	08/09		\$125,000	\$137,500	110%		
39		M	09/09		\$125,000	\$140,100	112%		
40		R	12/09		\$149,000	\$177,300	119%		

0

Weighted Average Ratio:**Average Ratio:****Average Deviation:****Quality Rating:****CLASSIFICATIONS**

L=LAND

M=CONDOS

R=RESIDENTIAL

W=WATERFRONT

RATIO STUDY: PROBLEM 1 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%		
2		M	06/09		\$172,000	\$106,600	62%		
3		M	12/09		\$165,000	\$102,300	62%		
4		R	02/09		\$174,500	\$118,700	68%		
5		R	03/09		\$232,500	\$165,100	71%		
6		R	02/09		\$199,000	\$143,300	72%		
7	1	M	10/09		\$162,000	\$119,900	74%		
8	2	R	09/09		\$145,000	\$107,300	74%		
9	3	M	06/09		\$159,000	\$119,200	75%		
10	4	R	08/09		\$205,000	\$157,800	77%		
11	5	R	01/09		\$158,900	\$122,400	77%		
12	6	M	02/09		\$150,000	\$115,500	77%		
13	7	M	05/09		\$148,000	\$117,700	80%		
14	8	R	05/09		\$215,000	\$174,200	81%		
15	9	R	09/09		\$178,000	\$146,000	82%		
16	10	R	11/09		\$209,900	\$176,300	84%		
17	11	R	03/09		\$150,000	\$126,000	84%		
18	12	R	04/09		\$167,500	\$142,400	85%		
19	13	M	07/09		\$138,500	\$120,500	87%		
20	14	R	04/09		\$239,000	\$207,900	87%		
21	15	M	11/09		\$145,000	\$127,600	88%		
22	16	R	10/09		\$244,000	\$219,600	90%		
23	17	R	03/09		\$177,700	\$159,900	90%		
24	18	M	08/09		\$142,000	\$129,200	91%		
25	19	R	02/09		\$180,000	\$163,800	91%		
26	20	R	07/09		\$224,500	\$206,500	92%		
27	21	M	05/09		\$135,000	\$126,900	94%		
28	22	R	10/09		\$149,000	\$140,000	94%		
29	23	R	01/09		\$192,500	\$182,900	95%		
30	24	M	11/09		\$139,900	\$132,900	95%		
31	25	R	05/09		\$136,500	\$129,700	95%		
32	26	R	08/09		\$188,000	\$184,200	98%		
33	27	M	04/09		\$147,000	\$145,500	99%		
34	28	M	04/09		\$132,600	\$132,700	100%		
35		R	07/09		\$184,500	\$188,200	102%		
36		R	12/09		\$156,600	\$164,400	105%		
37		M	10/09		\$139,000	\$150,100	108%		
38		R	08/09		\$125,000	\$137,500	110%		
39		M	09/09		\$125,000	\$140,100	112%		
40		R	12/09		\$149,000	\$177,300	119%		
Totals:					\$6,850,600	\$5,889,500			

Weighted Average Ratio: 5889500 ÷ 6850600

86%

Average Ratio:

Average Deviation:

Quality Rating:

CLASSIFICATIONS

L=LAND

M=CONDOS

R=RESIDENTIAL

W=WATERFRONT

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%		
2		M	06/09		\$172,000	\$106,600	62%		
3		M	12/09		\$165,000	\$102,300	62%		Outliers
4		R	02/09		\$174,500	\$118,700	68%		
5		R	03/09		\$232,500	\$165,100	71%		
6		R	02/09		\$199,000	\$143,300	72%		
7	1	M	10/09		\$162,000	\$119,900	74%		
8	2	R	09/09		\$145,000	\$107,300	74%		
9	3	M	06/09		\$159,000	\$119,200	75%		
10	4	R	08/09		\$205,000	\$157,800	77%		
11	5	R	01/09		\$158,900	\$122,400	77%		
12	6	M	02/09		\$150,000	\$115,500	77%		
13	7	M	05/09		\$148,000	\$117,700	80%		
14	8	R	05/09		\$215,000	\$174,200	81%		
15	9	R	09/09		\$178,000	\$146,000	82%		
16	10	R	11/09		\$209,900	\$176,300	84%		
17	11	R	03/09		\$150,000	\$126,000	84%		
18	12	R	04/09		\$167,500	\$142,400	85%		
19	13	M	07/09		\$138,500	\$120,500	87%		Mean
20	14	R	04/09		\$239,000	\$207,900	87%		87%
21	15	M	11/09		\$145,000	\$127,600	88%		
22	16	R	10/09		\$244,000	\$219,600	90%		
23	17	R	03/09		\$177,700	\$159,900	90%		
24	18	M	08/09		\$142,000	\$129,200	91%		
25	19	R	02/09		\$180,000	\$163,800	91%		
26	20	R	07/09		\$224,500	\$206,500	92%		
27	21	M	05/09		\$135,000	\$126,900	94%		
28	22	R	10/09		\$149,000	\$140,000	94%		
29	23	R	01/09		\$192,500	\$182,900	95%		
30	24	M	11/09		\$139,900	\$132,900	95%		
31	25	R	05/09		\$136,500	\$129,700	95%		
32	26	R	08/09		\$188,000	\$184,200	98%		
33	27	M	04/09		\$147,000	\$145,500	99%		
34	28	M	04/09		\$132,600	\$132,700	100%		2436
35		R	07/09		\$184,500	\$188,200	102%		
36		R	12/09		\$156,600	\$164,400	105%		
37		M	10/09		\$139,000	\$150,100	108%		Outliers
38		R	08/09		\$125,000	\$137,500	110%		
39		M	09/09		\$125,000	\$140,100	112%		
40		R	12/09		\$149,000	\$177,300	119%		
Totals:					\$6,850,600	\$5,889,500			

Weighted Average Ratio: $5889500 \div 6850600$ **86%**

Average Ratio: **2436** \div **28** **87**

Average Deviation:

Quality Rating:

Total Sales **40** x x **0.15** **0.15** Total **6**

Draw a line to separate these sales from the study 6 sales from the TOP and 6 Sales From the BOTTOM (These are your OUTLIERS)

RATIO STUDY: PROBLEM 1 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%	27	
2		M	06/09		\$172,000	\$106,600	62%	25	
3		M	12/09		\$165,000	\$102,300	62%	25	Outliers
4		R	02/09		\$174,500	\$118,700	68%	19	
5		R	03/09		\$232,500	\$165,100	71%	16	
6		R	02/09		\$199,000	\$143,300	72%	15	
7	1	M	10/09		\$162,000	\$119,900	74%	13	
8	2	R	09/09		\$145,000	\$107,300	74%	13	
9	3	M	06/09		\$159,000	\$119,200	75%	12	
10	4	R	08/09		\$205,000	\$157,800	77%	10	
11	5	R	01/09		\$158,900	\$122,400	77%	10	
12	6	M	02/09		\$150,000	\$115,500	77%	10	
13	7	M	05/09		\$148,000	\$117,700	80%	7	
14	8	R	05/09		\$215,000	\$174,200	81%	6	
15	9	R	09/09		\$178,000	\$146,000	82%	5	
16	10	R	11/09		\$209,900	\$176,300	84%	3	
17	11	R	03/09		\$150,000	\$126,000	84%	3	
18	12	R	04/09		\$167,500	\$142,400	85%	2	
19	13	M	07/09		\$138,500	\$120,500	87%	0	Mean
20	14	R	04/09		\$239,000	\$207,900	87%	0	87%
21	15	M	11/09		\$145,000	\$127,600	88%	1	
22	16	R	10/09		\$244,000	\$219,600	90%	3	
23	17	R	03/09		\$177,700	\$159,900	90%	3	
24	18	M	08/09		\$142,000	\$129,200	91%	4	
25	19	R	02/09		\$180,000	\$163,800	91%	4	
26	20	R	07/09		\$224,500	\$206,500	92%	5	
27	21	M	05/09		\$135,000	\$126,900	94%	7	
28	22	R	10/09		\$149,000	\$140,000	94%	7	
29	23	R	01/09		\$192,500	\$182,900	95%	8	
30	24	M	11/09		\$139,900	\$132,900	95%	8	
31	25	R	05/09		\$136,500	\$129,700	95%	8	
32	26	R	08/09		\$188,000	\$184,200	98%	11	
33	27	M	04/09		\$147,000	\$145,500	99%	12	
34	28	M	04/09		\$132,600	\$132,700	100%	13	2436
35		R	07/09		\$184,500	\$188,200	102%	15	
36		R	12/09		\$156,600	\$164,400	105%	18	
37		M	10/09		\$139,000	\$150,100	108%	21	Outliers
38		R	08/09		\$125,000	\$137,500	110%	23	
39		M	09/09		\$125,000	\$140,100	112%	25	
40		R	12/09		\$149,000	\$177,300	119%	32	
Totals:					\$6,850,600	\$5,889,500		449	

Weighted Average Ratio: $5889500 \div 6850600$ **86%**
Average Ratio: $2436 \div 28$ **87**
Average Deviation: $449 \div 40$ **11.2**
Quality Rating:

RATIO STUDY: PROBLEM 1 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09	\$269,000	\$161,400	60%	27	
2		M	06/09	\$172,000	\$106,600	62%	25	
3		M	12/09	\$165,000	\$102,300	62%	25	Outliers
4		R	02/09	\$174,500	\$118,700	68%	19	
5		R	03/09	\$232,500	\$165,100	71%	16	
6		R	02/09	\$199,000	\$143,300	72%	15	
7	1	M	10/09	\$162,000	\$119,900	74%	13	
8	2	R	09/09	\$145,000	\$107,300	74%	13	
9	3	M	06/09	\$159,000	\$119,200	75%	12	
10	4	R	08/09	\$205,000	\$157,800	77%	10	
11	5	R	01/09	\$158,900	\$122,400	77%	10	
12	6	M	02/09	\$150,000	\$115,500	77%	10	
13	7	M	05/09	\$148,000	\$117,700	80%	7	
14	8	R	05/09	\$215,000	\$174,200	81%	6	
15	9	R	09/09	\$178,000	\$146,000	82%	5	
16	10	R	11/09	\$209,900	\$176,300	84%	3	
17	11	R	03/09	\$150,000	\$126,000	84%	3	
18	12	R	04/09	\$167,500	\$142,400	85%	2	
19	13	M	07/09	\$138,500	\$120,500	87%	0	Mean
20	14	R	04/09	\$239,000	\$207,900	87%	0	87%
21	15	M	11/09	\$145,000	\$127,600	88%	1	
22	16	R	10/09	\$244,000	\$219,600	90%	3	
23	17	R	03/09	\$177,700	\$159,900	90%	3	
24	18	M	08/09	\$142,000	\$129,200	91%	4	
25	19	R	02/09	\$180,000	\$163,800	91%	4	
26	20	R	07/09	\$224,500	\$206,500	92%	5	
27	21	M	05/09	\$135,000	\$126,900	94%	7	
28	22	R	10/09	\$149,000	\$140,000	94%	7	
29	23	R	01/09	\$192,500	\$182,900	95%	8	
30	24	M	11/09	\$139,900	\$132,900	95%	8	
31	25	R	05/09	\$136,500	\$129,700	95%	8	
32	26	R	08/09	\$188,000	\$184,200	98%	11	
33	27	M	04/09	\$147,000	\$145,500	99%	12	
34	28	M	04/09	\$132,600	\$132,700	100%	13	2436
35		R	07/09	\$184,500	\$188,200	102%	15	
36		R	12/09	\$156,600	\$164,400	105%	18	
37		M	10/09	\$139,000	\$150,100	108%	21	Outliers
38		R	08/09	\$125,000	\$137,500	110%	23	
39		M	09/09	\$125,000	\$140,100	112%	25	
40		R	12/09	\$149,000	\$177,300	119%	32	
Totals:				\$6,850,600	\$5,889,500		449	

Weighted Average Ratio:	$5889500 \div 6850600$	86%
Average Ratio:	$2436 \div 28$	87
Average Deviation:	$449 \div 40$	11.2
Quality Rating:	$11.2 \div 87$	13

RATIO STUDY PROBLEM 1A: Condo Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		M	06/09		\$172,000	\$106,600	62%		
2		M	12/09		\$165,000	\$102,300	62%		
3	1	M	10/09		\$162,000	\$119,900	74%		
4	2	M	06/09		\$159,000	\$119,200	75%		
5	3	M	02/09		\$150,000	\$115,500	77%		
6	4	M	05/09		\$148,000	\$117,700	80%		
7	5	M	07/09		\$138,500	\$120,500	87%		
8	6	M	11/09		\$145,000	\$127,600	88%		
9	7	M	08/09		\$142,000	\$129,200	91%		
10	8	M	05/09		\$135,000	\$126,900	94%		
11	9	M	11/09		\$139,900	\$132,900	95%		
12	10	M	04/09		\$147,000	\$145,500	99%		
13	11	M	04/09		\$132,600	\$132,700	100%		
14		M	10/09		\$139,000	\$150,100	108%		
15		M	09/09		\$125,000	\$140,100	112%		

Totals:

Weighted Average Ratio:**Average Ratio:****Average Deviation:****Quality Rating:**

RATIO STUDY PROBLEM 1A: Condo Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		M	06/09		\$172,000	\$106,600	62%		
2		M	12/09		\$165,000	\$102,300	62%		
3	1	M	10/09		\$162,000	\$119,900	74%		
4	2	M	06/09		\$159,000	\$119,200	75%		
5	3	M	02/09		\$150,000	\$115,500	77%		
6	4	M	05/09		\$148,000	\$117,700	80%		
7	5	M	07/09		\$138,500	\$120,500	87%		
8	6	M	11/09		\$145,000	\$127,600	88%		
9	7	M	08/09		\$142,000	\$129,200	91%		
10	8	M	05/09		\$135,000	\$126,900	94%		
11	9	M	11/09		\$139,900	\$132,900	95%		
12	10	M	04/09		\$147,000	\$145,500	99%		
13	11	M	04/09		\$132,600	\$132,700	100%		
14		M	10/09		\$139,000	\$150,100	108%		
15		M	09/09		\$125,000	\$140,100	112%		
Totals:					\$2,200,000	\$1,886,700			

Weighted Average Ratio: **$1,886,700 \div 2,200,000$** = **86%**

Average Ratio:

Average Deviation:

Quality Rating:

RATIO STUDY PROBLEM 1A: Condo Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		M	06/09		\$172,000	\$106,600	62%		Outliers
2		M	12/09		\$165,000	\$102,300	62%		
3	1	M	10/09		\$162,000	\$119,900	74%		
4	2	M	06/09		\$159,000	\$119,200	75%		
5	3	M	02/09		\$150,000	\$115,500	77%		
6	4	M	05/09		\$148,000	\$117,700	80%		
7	5	M	07/09		\$138,500	\$120,500	87%		Mean
8	6	M	11/09		\$145,000	\$127,600	88%		87%
9	7	M	08/09		\$142,000	\$129,200	91%		
10	8	M	05/09		\$135,000	\$126,900	94%		
11	9	M	11/09		\$139,900	\$132,900	95%		
12	10	M	04/09		\$147,000	\$145,500	99%		
13	11	M	04/09		\$132,600	\$132,700	100%		960
14		M	10/09		\$139,000	\$150,100	108%		Outliers
15		M	09/09		\$125,000	\$140,100	112%		
Totals:					\$2,200,000	\$1,886,700		0	

Weighted Average Ratio: $1,886,700 \div 2,200,000 = 86\%$

Average Ratio: $960 \div 11 = 87$

Average Deviation:

Quality Rating:

Draw a line to separate these sales from the study 6 sales from the TOP and 6 Sales From the BOTTOM (These are your OUTLIERS)

Total Sales x 0.15
15 x 0.15 2.25

RATIO STUDY PROBLEM 1A: Condo Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		M	06/09		\$172,000	\$106,600	62%	25	Outliers
2		M	12/09		\$165,000	\$102,300	62%	25	
3	1	M	10/09		\$162,000	\$119,900	74%	13	
4	2	M	06/09		\$159,000	\$119,200	75%	12	
5	3	M	02/09		\$150,000	\$115,500	77%	10	
6	4	M	05/09		\$148,000	\$117,700	80%	7	
7	5	M	07/09		\$138,500	\$120,500	87%	0	Mean
8	6	M	11/09		\$145,000	\$127,600	88%	1	87%
9	7	M	08/09		\$142,000	\$129,200	91%	4	
10	8	M	05/09		\$135,000	\$126,900	94%	7	
11	9	M	11/09		\$139,900	\$132,900	95%	8	
12	10	M	04/09		\$147,000	\$145,500	99%	12	
13	11	M	04/09		\$132,600	\$132,700	100%	13	960
14		M	10/09		\$139,000	\$150,100	108%	21	Outliers
15		M	09/09		\$125,000	\$140,100	112%	25	
Totals:					\$2,200,000	\$1,886,700		183	

Weighted Average Ratio: $1,886,700 \div 2,200,000 = 86\%$
Average Ratio: $960 \div 11 = 87$
Average Deviation: $183 \div 15 = 12.2$
Quality Rating:

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		M	06/09		\$172,000	\$106,600	62%	25	Outliers
2		M	12/09		\$165,000	\$102,300	62%	25	
3	1	M	10/09		\$162,000	\$119,900	74%	13	
4	2	M	06/09		\$159,000	\$119,200	75%	12	
5	3	M	02/09		\$150,000	\$115,500	77%	10	
6	4	M	05/09		\$148,000	\$117,700	80%	7	
7	5	M	07/09		\$138,500	\$120,500	87%	0	Mean
8	6	M	11/09		\$145,000	\$127,600	88%	1	87%
9	7	M	08/09		\$142,000	\$129,200	91%	4	
10	8	M	05/09		\$135,000	\$126,900	94%	7	
11	9	M	11/09		\$139,900	\$132,900	95%	8	
12	10	M	04/09		\$147,000	\$145,500	99%	12	
13	11	M	04/09		\$132,600	\$132,700	100%	13	960
14		M	10/09		\$139,000	\$150,100	108%	21	Outliers
15		M	09/09		\$125,000	\$140,100	112%	25	
Totals:					\$2,200,000	\$1,886,700		183	

Weighted Average Ratio:	2,200,000	÷	1,886,700	86%
Average Ratio:	960	÷	11	87
Average Deviation:	183	÷	15	12.2
Quality Rating:	12.2	÷	87%	14

Weighted Average Ratio:	86
Average Ratio:	87
Average Deviation:	12.2
Quality Rating:	14

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		M	06/09		\$172,000	\$106,600	62%	25	Outliers
2		M	12/09		\$165,000	\$102,300	62%	25	
3	1	M	10/09		\$162,000	\$119,900	74%	13	
4	2	M	06/09		\$159,000	\$119,200	75%	12	
5	3	M	02/09		\$150,000	\$115,500	77%	10	
6	4	M	05/09		\$148,000	\$117,700	80%	7	
7	5	M	07/09		\$138,500	\$120,500	87%	0	Mean
8	6	M	11/09		\$145,000	\$127,600	88%	1	87%
9	7	M	08/09		\$142,000	\$129,200	91%	4	
10	8	M	05/09		\$135,000	\$126,900	94%	7	
11	9	M	11/09		\$139,900	\$132,900	95%	8	
12	10	M	04/09		\$147,000	\$145,500	99%	12	
13	11	M	04/09		\$132,600	\$132,700	100%	13	960
14		M	10/09		\$139,000	\$150,100	108%	21	Outliers
15		M	09/09		\$125,000	\$140,100	112%	25	
Totals:					\$2,200,000	\$1,886,700		183	

Weighted Average Ratio:	86% (1,886,700/2,200,000)
Average Ratio:	87% (960/11)
Average Deviation:	12.2% (183/15)
Quality Rating:	14 (12.2/87)

Weighted Average Ratio:	86% (1,886,700/2,200,000)
Average Ratio:	87% (960/11)
Average Deviation:	12.2% (183/15)
Quality Rating:	14 (12.2/87)

RATIO STUDY PROBLEM 1B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	R	04/09	\$269,000	\$161,400	60%	
2	R	02/09	\$174,500	\$118,700	68%	
3	R	03/09	\$232,500	\$165,100	71%	
4	R	02/09	\$199,000	\$143,300	72%	
5	R	09/09	\$145,000	\$107,300	74%	
6	R	08/09	\$205,000	\$157,800	77%	
7	R	01/09	\$158,900	\$122,400	77%	
8	R	05/09	\$215,000	\$174,200	81%	
9	R	09/09	\$178,000	\$146,000	82%	
10	R	11/09	\$209,900	\$176,300	84%	
11	R	03/09	\$150,000	\$126,000	84%	
12	R	04/09	\$167,500	\$142,400	85%	
13	R	04/09	\$239,000	\$207,900	87%	
14	R	10/09	\$244,000	\$219,600	90%	
15	R	03/09	\$177,700	\$159,900	90%	
16	R	02/09	\$180,000	\$163,800	91%	
17	R	07/09	\$224,500	\$206,500	92%	
18	R	10/09	\$149,000	\$140,000	94%	
19	R	01/09	\$192,500	\$182,900	95%	
20	R	05/09	\$136,500	\$129,700	95%	
21	R	08/09	\$188,000	\$184,200	98%	
22	R	07/09	\$184,500	\$188,200	102%	
23	R	12/09	\$156,600	\$164,400	105%	
24	R	08/09	\$125,000	\$137,500	110%	
25	R	12/09	\$149,000	\$177,300	119%	

Totals:

Weighted Average Ratio:**Average Ratio:****Average Deviation:****Quality Rating:**

Rev 2011

Weighted Average Ratio:	4,002,800	÷	\$4,650,600	=	86%
Average Ratio:		÷		=	
Outliers		x		=	
Average Deviation:		÷		=	
Quality Rating:		÷		=	

RATIO STUDY PROBLEM 1B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%		
2		R	02/09		\$174,500	\$118,700	68%		Outliers
3		R	03/09		\$232,500	\$165,100	71%		
4		R	02/09		\$199,000	\$143,300	72%		
5	1	R	09/09		\$145,000	\$107,300	74%		
6	2	R	08/09		\$205,000	\$157,800	77%		
7	3	R	01/09		\$158,900	\$122,400	77%		
8	4	R	05/09		\$215,000	\$174,200	81%		
9	5	R	09/09		\$178,000	\$146,000	82%		
10	6	R	11/09		\$209,900	\$176,300	84%		
11	7	R	03/09		\$150,000	\$126,000	84%		
12	8	R	04/09		\$167,500	\$142,400	85%		
13	9	R	04/09		\$239,000	\$207,900	87%		Mean
14	10	R	10/09		\$244,000	\$219,600	90%		87%
15	11	R	03/09		\$177,700	\$159,900	90%		
16	12	R	02/09		\$180,000	\$163,800	91%		
17	13	R	07/09		\$224,500	\$206,500	92%		
18	14	R	10/09		\$149,000	\$140,000	94%		
19	15	R	01/09		\$192,500	\$182,900	95%		
20	16	R	05/09		\$136,500	\$129,700	95%		
21	17	R	08/09		\$188,000	\$184,200	98%		1476
22		R	07/09		\$184,500	\$188,200	102%		
23		R	12/09		\$156,600	\$164,400	105%		Outliers
24		R	08/09		\$125,000	\$137,500	110%		
25		R	12/09		\$149,000	\$177,300	119%		
Totals:					\$4,650,600	\$4,002,800			

Weighted Average Ratio:	4,002,800	÷	\$4,650,600	=	86%
Outliers:	25	x	0.15	=	4
Average Ratio:	1476	÷	17	=	87
Average Deviation:		÷		=	
Quality Rating:		÷		=	

RATIO STUDY PROBLEM 1B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%	27	
2		R	02/09		\$174,500	\$118,700	68%	19	Outliers
3		R	03/09		\$232,500	\$165,100	71%	16	
4		R	02/09		\$199,000	\$143,300	72%	15	
5	1	R	09/09		\$145,000	\$107,300	74%	13	
6	2	R	08/09		\$205,000	\$157,800	77%	10	
7	3	R	01/09		\$158,900	\$122,400	77%	10	
8	4	R	05/09		\$215,000	\$174,200	81%	6	
9	5	R	09/09		\$178,000	\$146,000	82%	5	
10	6	R	11/09		\$209,900	\$176,300	84%	3	
11	7	R	03/09		\$150,000	\$126,000	84%	3	
12	8	R	04/09		\$167,500	\$142,400	85%	2	
13	9	R	04/09		\$239,000	\$207,900	87%	0	Mean
14	10	R	10/09		\$244,000	\$219,600	90%	3	87%
15	11	R	03/09		\$177,700	\$159,900	90%	3	
16	12	R	02/09		\$180,000	\$163,800	91%	4	
17	13	R	07/09		\$224,500	\$206,500	92%	5	
18	14	R	10/09		\$149,000	\$140,000	94%	7	
19	15	R	01/09		\$192,500	\$182,900	95%	8	
20	16	R	05/09		\$136,500	\$129,700	95%	8	
21	17	R	08/09		\$188,000	\$184,200	98%	11	1476
22		R	07/09		\$184,500	\$188,200	102%	15	
23		R	12/09		\$156,600	\$164,400	105%	18	Outliers
24		R	08/09		\$125,000	\$137,500	110%	23	
25		R	12/09		\$149,000	\$177,300	119%	32	
Totals:					\$4,650,600	\$4,002,800		266	

Weighted Average Ratio:	4,002,800	÷	\$4,650,600	=	86%
Outliers:	25	x	0.15	=	4
Average Ratio:	1476	÷	17	=	87
Average Deviation:	266	÷	25	=	10.6
Quality Rating:		÷		=	

RATIO STUDY PROBLEM 1B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%	27	
2		R	02/09		\$174,500	\$118,700	68%	19	Outliers
3		R	03/09		\$232,500	\$165,100	71%	16	
4		R	02/09		\$199,000	\$143,300	72%	15	
5	1	R	09/09		\$145,000	\$107,300	74%	13	
6	2	R	08/09		\$205,000	\$157,800	77%	10	
7	3	R	01/09		\$158,900	\$122,400	77%	10	
8	4	R	05/09		\$215,000	\$174,200	81%	6	
9	5	R	09/09		\$178,000	\$146,000	82%	5	
10	6	R	11/09		\$209,900	\$176,300	84%	3	
11	7	R	03/09		\$150,000	\$126,000	84%	3	
12	8	R	04/09		\$167,500	\$142,400	85%	2	
13	9	R	04/09		\$239,000	\$207,900	87%	0	Mean
14	10	R	10/09		\$244,000	\$219,600	90%	3	87%
15	11	R	03/09		\$177,700	\$159,900	90%	3	
16	12	R	02/09		\$180,000	\$163,800	91%	4	
17	13	R	07/09		\$224,500	\$206,500	92%	5	
18	14	R	10/09		\$149,000	\$140,000	94%	7	
19	15	R	01/09		\$192,500	\$182,900	95%	8	
20	16	R	05/09		\$136,500	\$129,700	95%	8	
21	17	R	08/09		\$188,000	\$184,200	98%	11	1476
22		R	07/09		\$184,500	\$188,200	102%	15	
23		R	12/09		\$156,600	\$164,400	105%	18	Outliers
24		R	08/09		\$125,000	\$137,500	110%	23	
25		R	12/09		\$149,000	\$177,300	119%	32	
Totals:					\$4,650,600	\$4,002,800		266	

Weighted Average Ratio:	4,002,800	÷	\$4,650,600	=	86%
Outliers:	25	x	0.15	=	4
Average Ratio:	1476	÷	17	=	87
Average Deviation:	266	÷	25	=	10.6
Quality Rating	10.6	÷	87	=	12

RATIO STUDY PROBLEM 1B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	04/09		\$269,000	\$161,400	60%	27	
2		R	02/09		\$174,500	\$118,700	68%	19	Outliers
3		R	03/09		\$232,500	\$165,100	71%	16	
4		R	02/09		\$199,000	\$143,300	72%	15	
5	1	R	09/09		\$145,000	\$107,300	74%	13	
6	2	R	08/09		\$205,000	\$157,800	77%	10	
7	3	R	01/09		\$158,900	\$122,400	77%	10	
8	4	R	05/09		\$215,000	\$174,200	81%	6	
9	5	R	09/09		\$178,000	\$146,000	82%	5	
10	6	R	11/09		\$209,900	\$176,300	84%	3	
11	7	R	03/09		\$150,000	\$126,000	84%	3	
12	8	R	04/09		\$167,500	\$142,400	85%	2	
13	9	R	04/09		\$239,000	\$207,900	87%	0	Mean
14	10	R	10/09		\$244,000	\$219,600	90%	3	87%
15	11	R	03/09		\$177,700	\$159,900	90%	3	
16	12	R	02/09		\$180,000	\$163,800	91%	4	
17	13	R	07/09		\$224,500	\$206,500	92%	5	
18	14	R	10/09		\$149,000	\$140,000	94%	7	
19	15	R	01/09		\$192,500	\$182,900	95%	8	
20	16	R	05/09		\$136,500	\$129,700	95%	8	
21	17	R	08/09		\$188,000	\$184,200	98%	11	1476
22		R	07/09		\$184,500	\$188,200	102%	15	
23		R	12/09		\$156,600	\$164,400	105%	18	Outliers
24		R	08/09		\$125,000	\$137,500	110%	23	
25		R	12/09		\$149,000	\$177,300	119%	32	
Totals:					\$4,650,600	\$4,002,800		266	

Weighted Average Ratio:	86% (4,002,800/4,650,600)
Average Ratio:	87% (1476/17)
Average Deviation:	10.6 (266/25)
Quality Rating:	12 (10.6/87)

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	L	12/09	\$48,900	\$22,000	45%	
2	L	04/09	\$46,000	\$22,100	48%	
3	L	03/09	\$39,700	\$19,500	49%	
4	R	09/09	\$315,500	\$167,200	53%	
5	L	06/09	\$65,000	\$35,800	55%	
6	R	11/09	\$258,000	\$149,600	58%	
7	L	09/09	\$40,000	\$24,000	60%	
8	L	10/09	\$49,000	\$29,900	61%	
9	L	02/09	\$52,000	\$32,200	62%	
10	R	02/09	\$226,500	\$140,400	62%	
11	R	05/09	\$278,900	\$175,700	63%	
12	R	12/09	\$198,000	\$126,700	64%	
13	L	09/09	\$45,000	\$28,800	64%	
14	R	08/09	\$269,000	\$172,200	64%	
15	R	02/09	\$205,000	\$133,000	65%	
16	L	05/09	\$34,500	\$22,400	65%	
17	R	05/09	\$188,000	\$124,000	66%	
18	R	04/09	\$322,000	\$212,500	66%	
19	L	07/09	\$43,000	\$28,500	66%	
20	L	07/09	\$38,000	\$25,800	68%	
21	R	06/09	\$164,500	\$111,900	68%	
22	L	08/09	\$42,000	\$28,600	68%	
23	R	11/09	\$305,000	\$210,500	69%	
24	R	02/09	\$139,000	\$97,000	70%	
25	R	01/09	\$297,500	\$208,200	70%	
26	R	10/09	\$162,500	\$115,400	71%	
27	R	03/09	\$292,000	\$210,200	72%	
28	L	06/09	\$32,500	\$23,400	72%	
29	R	08/09	\$178,000	\$131,700	74%	
30	L	04/09	\$37,000	\$27,700	75%	
31	L	03/09	\$34,900	\$26,500	76%	
32	R	01/09	\$195,000	\$150,000	77%	
33	R	05/09	\$270,000	\$207,900	77%	
34	R	12/09	\$284,900	\$222,200	78%	
35	R	08/09	\$136,000	\$108,800	80%	
36	R	11/09	\$265,000	\$225,200	85%	
37	R	03/09	\$142,500	\$128,300	90%	
38	R	09/09	\$162,000	\$153,900	95%	

Totals: **\$5,902,300** **\$4,079,700** 0

Weighted Average Ratio: **\$4,079,700** ÷ **\$5,902,300** = **69%**

Average Ratio:

Average Deviation:

Quality Rating:

RATIO STUDY PROBLEM 2 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%		Outliers
2		L	04/09		\$46,000	\$22,100	48%		
3		L	03/09		\$39,700	\$19,500	49%		
4		R	09/09		\$315,500	\$167,200	53%		
5		L	06/09		\$65,000	\$35,800	55%		
6		R	11/09		\$258,000	\$149,600	58%		
7	1	L	09/09		\$40,000	\$24,000	60%		
8	2	L	10/09		\$49,000	\$29,900	61%		
9	3	L	02/09		\$52,000	\$32,200	62%		
10	4	R	02/09		\$226,500	\$140,400	62%		
11	5	R	05/09		\$278,900	\$175,700	63%		
12	6	R	12/09		\$198,000	\$126,700	64%		
13	7	L	09/09		\$45,000	\$28,800	64%		
14	8	R	08/09		\$269,000	\$172,200	64%		
15	9	R	02/09		\$205,000	\$133,000	65%		
16	10	L	05/09		\$34,500	\$22,400	65%		
17	11	R	05/09		\$188,000	\$124,000	66%		
18	12	R	04/09		\$322,000	\$212,500	66%		
19	13	L	07/09		\$43,000	\$28,500	66%		
20	14	L	07/09		\$38,000	\$25,800	68%		Mean
21	15	R	06/09		\$164,500	\$111,900	68%		68%
22	16	L	08/09		\$42,000	\$28,600	68%		
23	17	R	11/09		\$305,000	\$210,500	69%		
24	18	R	02/09		\$139,000	\$97,000	70%		
25	19	R	01/09		\$297,500	\$208,200	70%		
26	20	R	10/09		\$162,500	\$115,400	71%		
27	21	R	03/09		\$292,000	\$210,200	72%		
28	22	L	06/09		\$32,500	\$23,400	72%		
29	23	R	08/09		\$178,000	\$131,700	74%		
30	24	L	04/09		\$37,000	\$27,700	75%		
31	25	L	03/09		\$34,900	\$26,500	76%		
32	26	R	01/09		\$195,000	\$150,000	77%		1758
33		R	05/09		\$270,000	\$207,900	77%		Outliers
34		R	12/09		\$284,900	\$222,200	78%		
35		R	08/09		\$136,000	\$108,800	80%		
36		R	11/09		\$265,000	\$225,200	85%		
37		R	03/09		\$142,500	\$128,300	90%		
38		R	09/09		\$162,000	\$153,900	95%		
Totals:					\$5,902,300	\$4,079,700		0	

Weighted Average Ratio:	\$4,079,700	÷	\$5,902,300	=	69%
Outliers:	38	X	0.15	=	5.70
Average Ratio:	1758	÷	26	=	68
Average Deviation:					
Quality Rating:					

RATIO STUDY PROBLEM 2 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%	23	Outliers
2		L	04/09		\$46,000	\$22,100	48%	20	
3		L	03/09		\$39,700	\$19,500	49%	19	
4		R	09/09		\$315,500	\$167,200	53%	15	
5		L	06/09		\$65,000	\$35,800	55%	13	
6		R	11/09		\$258,000	\$149,600	58%	10	
7	1	L	09/09		\$40,000	\$24,000	60%	8	
8	2	L	10/09		\$49,000	\$29,900	61%	7	
9	3	L	02/09		\$52,000	\$32,200	62%	6	
10	4	R	02/09		\$226,500	\$140,400	62%	6	
11	5	R	05/09		\$278,900	\$175,700	63%	5	
12	6	R	12/09		\$198,000	\$126,700	64%	4	
13	7	L	09/09		\$45,000	\$28,800	64%	4	
14	8	R	08/09		\$269,000	\$172,200	64%	4	
15	9	R	02/09		\$205,000	\$133,000	65%	3	
16	10	L	05/09		\$34,500	\$22,400	65%	3	
17	11	R	05/09		\$188,000	\$124,000	66%	2	
18	12	R	04/09		\$322,000	\$212,500	66%	2	
19	13	L	07/09		\$43,000	\$28,500	66%	2	
20	14	L	07/09		\$38,000	\$25,800	68%	0	Mean
21	15	R	06/09		\$164,500	\$111,900	68%	0	68%
22	16	L	08/09		\$42,000	\$28,600	68%	0	
23	17	R	11/09		\$305,000	\$210,500	69%	1	
24	18	R	02/09		\$139,000	\$97,000	70%	2	
25	19	R	01/09		\$297,500	\$208,200	70%	2	
26	20	R	10/09		\$162,500	\$115,400	71%	3	
27	21	R	03/09		\$292,000	\$210,200	72%	4	
28	22	L	06/09		\$32,500	\$23,400	72%	4	
29	23	R	08/09		\$178,000	\$131,700	74%	6	
30	24	L	04/09		\$37,000	\$27,700	75%	7	
31	25	L	03/09		\$34,900	\$26,500	76%	8	
32	26	R	01/09		\$195,000	\$150,000	77%	9	1758
33		R	05/09		\$270,000	\$207,900	77%	9	Outliers
34		R	12/09		\$284,900	\$222,200	78%	10	
35		R	08/09		\$136,000	\$108,800	80%	12	
36		R	11/09		\$265,000	\$225,200	85%	17	
37		R	03/09		\$142,500	\$128,300	90%	22	
38		R	09/09		\$162,000	\$153,900	95%	27	
Totals:					\$5,902,300	\$4,079,700		299	

Weighted Average Ratio:	\$4,079,700	÷	\$5,902,300	=	69%
Outliers:	38	X	0.15	=	5.70
Average Ratio:	1758	÷	26	=	68
Average Deviation:	299	÷	38	=	7.9
Quality Rating:					

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%	23	Outliers
2		L	04/09		\$46,000	\$22,100	48%	20	
3		L	03/09		\$39,700	\$19,500	49%	19	
4		R	09/09		\$315,500	\$167,200	53%	15	
5		L	06/09		\$65,000	\$35,800	55%	13	
6		R	11/09		\$258,000	\$149,600	58%	10	
7	1	L	09/09		\$40,000	\$24,000	60%	8	
8	2	L	10/09		\$49,000	\$29,900	61%	7	
9	3	L	02/09		\$52,000	\$32,200	62%	6	
10	4	R	02/09		\$226,500	\$140,400	62%	6	
11	5	R	05/09		\$278,900	\$175,700	63%	5	
12	6	R	12/09		\$198,000	\$126,700	64%	4	
13	7	L	09/09		\$45,000	\$28,800	64%	4	
14	8	R	08/09		\$269,000	\$172,200	64%	4	
15	9	R	02/09		\$205,000	\$133,000	65%	3	
16	10	L	05/09		\$34,500	\$22,400	65%	3	
17	11	R	05/09		\$188,000	\$124,000	66%	2	
18	12	R	04/09		\$322,000	\$212,500	66%	2	
19	13	L	07/09		\$43,000	\$28,500	66%	2	
20	14	L	07/09		\$38,000	\$25,800	68%	0	Mean
21	15	R	06/09		\$164,500	\$111,900	68%	0	68%
22	16	L	08/09		\$42,000	\$28,600	68%	0	
23	17	R	11/09		\$305,000	\$210,500	69%	1	
24	18	R	02/09		\$139,000	\$97,000	70%	2	
25	19	R	01/09		\$297,500	\$208,200	70%	2	
26	20	R	10/09		\$162,500	\$115,400	71%	3	
27	21	R	03/09		\$292,000	\$210,200	72%	4	
28	22	L	06/09		\$32,500	\$23,400	72%	4	
29	23	R	08/09		\$178,000	\$131,700	74%	6	
30	24	L	04/09		\$37,000	\$27,700	75%	7	
31	25	L	03/09		\$34,900	\$26,500	76%	8	
32	26	R	01/09		\$195,000	\$150,000	77%	9	1758
33		R	05/09		\$270,000	\$207,900	77%	9	Outliers
34		R	12/09		\$284,900	\$222,200	78%	10	
35		R	08/09		\$136,000	\$108,800	80%	12	
36		R	11/09		\$265,000	\$225,200	85%	17	
37		R	03/09		\$142,500	\$128,300	90%	22	
38		R	09/09		\$162,000	\$153,900	95%	27	
Totals:					\$5,902,300	\$4,079,700		299	

Weighted Average Ratio:	\$4,079,700	÷	\$5,902,300	=	69%
Outliers:	38	X	0.15	=	5.70
Average Ratio:	1758	÷	26	=	68
Average Deviation:	299	÷	38	=	7.9
Quality Rating:	7.9	÷	68	=	12

RATIO STUDY PROBLEM 2 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%	23	
2		L	04/09		\$46,000	\$22,100	48%	20	
3		L	03/09		\$39,700	\$19,500	49%	19	Outliers
4		R	09/09		\$315,500	\$167,200	53%	15	
5		L	06/09		\$65,000	\$35,800	55%	13	
6		R	11/09		\$258,000	\$149,600	58%	10	
7	1	L	09/09		\$40,000	\$24,000	60%	8	
8	2	L	10/09		\$49,000	\$29,900	61%	7	
9	3	L	02/09		\$52,000	\$32,200	62%	6	
10	4	R	02/09		\$226,500	\$140,400	62%	6	
11	5	R	05/09		\$278,900	\$175,700	63%	5	
12	6	R	12/09		\$198,000	\$126,700	64%	4	
13	7	L	09/09		\$45,000	\$28,800	64%	4	
14	8	R	08/09		\$269,000	\$172,200	64%	4	
15	9	R	02/09		\$205,000	\$133,000	65%	3	
16	10	L	05/09		\$34,500	\$22,400	65%	3	
17	11	R	05/09		\$188,000	\$124,000	66%	2	
18	12	R	04/09		\$322,000	\$212,500	66%	2	
19	13	L	07/09		\$43,000	\$28,500	66%	2	
20	14	L	07/09		\$38,000	\$25,800	68%	0	Mean
21	15	R	06/09		\$164,500	\$111,900	68%	0	68%
22	16	L	08/09		\$42,000	\$28,600	68%	0	
23	17	R	11/09		\$305,000	\$210,500	69%	1	
24	18	R	02/09		\$139,000	\$97,000	70%	2	
25	19	R	01/09		\$297,500	\$208,200	70%	2	
26	20	R	10/09		\$162,500	\$115,400	71%	3	
27	21	R	03/09		\$292,000	\$210,200	72%	4	
28	22	L	06/09		\$32,500	\$23,400	72%	4	
29	23	R	08/09		\$178,000	\$131,700	74%	6	
30	24	L	04/09		\$37,000	\$27,700	75%	7	
31	25	L	03/09		\$34,900	\$26,500	76%	8	
32	26	R	01/09		\$195,000	\$150,000	77%	9	1758
33		R	05/09		\$270,000	\$207,900	77%	9	
34		R	12/09		\$284,900	\$222,200	78%	10	
35		R	08/09		\$136,000	\$108,800	80%	12	Outliers
36		R	11/09		\$265,000	\$225,200	85%	17	
37		R	03/09		\$142,500	\$128,300	90%	22	
38		R	09/09		\$162,000	\$153,900	95%	27	
Totals:					\$5,902,300	\$4,079,700		299	

Weighted Average Ratio: 69% (4,079,700/5,902,300)
Average Ratio: 68% (1758/26)
Average Deviation: 7.9 (299/38)
Quality Rating: 12 (7.9/68)

CLASSIFICATIONS
 L=LAND
 M=CONDO
 R=RESIDENTIAL
 W=WATERFRONT

RATIO STUDY PROBLEM 2 (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.	68
1	L	12/09	\$48,900	\$22,000	45%	45	23
2	L	04/09	\$46,000	\$22,100	48%	48	20
3	L	03/09	\$39,700	\$19,500	49%	49	19
4	R	09/09	\$315,500	\$167,200	53%	53	15
5	L	06/09	\$65,000	\$35,800	55%	55	13
6	R	11/09	\$258,000	\$149,600	58%	58	10
7	L	09/09	\$40,000	\$24,000	60%	60	8
8	L	10/09	\$49,000	\$29,900	61%	61	7
9	L	02/09	\$52,000	\$32,200	62%	62	6
10	R	02/09	\$226,500	\$140,400	62%	62	6
11	R	05/09	\$278,900	\$175,700	63%	63	5
12	R	12/09	\$198,000	\$126,700	64%	64	4
13	L	09/09	\$45,000	\$28,800	64%	64	4
14	R	08/09	\$269,000	\$172,200	64%	64	4
15	R	02/09	\$205,000	\$133,000	65%	65	3
16	L	05/09	\$34,500	\$22,400	65%	65	3
17	R	05/09	\$188,000	\$124,000	66%	66	2
18	R	04/09	\$322,000	\$212,500	66%	66	2
19	L	07/09	\$43,000	\$28,500	66%	66	2
20	L	07/09	\$38,000	\$25,800	68%	68	0
21	R	06/09	\$164,500	\$111,900	68%	68	0
22	L	08/09	\$42,000	\$28,600	68%	68	0
23	R	11/09	\$305,000	\$210,500	69%	69	1
24	R	02/09	\$139,000	\$97,000	70%	70	2
25	R	01/09	\$297,500	\$208,200	70%	70	2
26	R	10/09	\$162,500	\$115,400	71%	71	3
27	R	03/09	\$292,000	\$210,200	72%	72	4
28	L	06/09	\$32,500	\$23,400	72%	72	4
29	R	08/09	\$178,000	\$131,700	74%	74	6
30	L	04/09	\$37,000	\$27,700	75%	75	7
31	L	03/09	\$34,900	\$26,500	76%	76	8
32	R	01/09	\$195,000	\$150,000	77%	77	9
33	R	05/09	\$270,000	\$207,900	77%	77	9
34	R	12/09	\$284,900	\$222,200	78%	78	10
35	R	08/09	\$136,000	\$108,800	80%	80	12
36	R	11/09	\$265,000	\$225,200	85%	85	17
37	R	03/09	\$142,500	\$128,300	90%	90	22
38	R	09/09	\$162,000	\$153,900	95%	95	27
Totals:			\$5,902,300	\$4,079,700		1758	299

Weighted Average Ratio: 69%
Average Ratio: 68
Average Deviation: 7.9
Quality Rating: 12

RATIO STUDY PROBLEM 2 (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	L	12/09	\$48,900	\$22,000	45%	
2	L	04/09	\$46,000	\$22,100	48%	
3	L	03/09	\$39,700	\$19,500	49%	
4	L	06/09	\$65,000	\$35,800	55%	
5	L	09/09	\$40,000	\$24,000	60%	
6	L	10/09	\$49,000	\$29,900	61%	
7	L	02/09	\$52,000	\$32,200	62%	
8	L	09/09	\$45,000	\$28,800	64%	
9	L	05/09	\$34,500	\$22,400	65%	
10	L	07/09	\$43,000	\$28,500	66%	
11	L	07/09	\$38,000	\$25,800	68%	
12	L	08/09	\$42,000	\$28,600	68%	
13	L	06/09	\$32,500	\$23,400	72%	
14	L	04/09	\$37,000	\$27,700	75%	
15	L	03/09	\$34,900	\$26,500	76%	
Totals			\$647,500	\$397,200		

Weighted Average Ratio: **\$ 397,200** ÷ **\$647,500** = **61%**

Average Ratio:

Average Deviation:

Quality Rating:

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	R	09/09	\$315,500	\$167,200	53%	
2	R	11/09	\$258,000	\$149,600	58%	
3	R	02/09	\$226,500	\$140,400	62%	
4	R	05/09	\$278,900	\$175,700	63%	
5	R	12/09	\$198,000	\$126,700	64%	
6	R	08/09	\$269,000	\$172,200	64%	
7	R	02/09	\$205,000	\$133,000	65%	
8	R	05/09	\$188,000	\$124,000	66%	
9	R	04/09	\$322,000	\$212,500	66%	
10	R	06/09	\$164,500	\$111,900	68%	
11	R	11/09	\$305,000	\$210,500	69%	
12	R	02/09	\$139,000	\$97,000	70%	
13	R	01/09	\$297,500	\$208,200	70%	
14	R	10/09	\$162,500	\$115,400	71%	
15	R	03/09	\$292,000	\$210,200	72%	
16	R	08/09	\$178,000	\$131,700	74%	
17	R	01/09	\$195,000	\$150,000	77%	
18	R	05/09	\$270,000	\$207,900	77%	
19	R	12/09	\$284,900	\$222,200	78%	
20	R	08/09	\$136,000	\$108,800	80%	
21	R	11/09	\$265,000	\$225,200	85%	
22	R	03/09	\$142,500	\$128,300	90%	
23	R	09/09	\$162,000	\$153,900	95%	
Totals			\$5,254,800	\$3,682,500		

Weighted Average Ratio: **\$3,682,500** ÷ **\$5,254,800** = **70%**
Average Ratio:
Average Deviation:
Quality Rating:

RATIO STUDY PROBLEM 2 (SOLUTIONS)

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%		Outliers
2		L	04/09		\$46,000	\$22,100	48%		
3	1	L	03/09		\$39,700	\$19,500	49%		690
4	2	L	06/09		\$65,000	\$35,800	55%		
5	3	L	09/09		\$40,000	\$24,000	60%		
6	4	L	10/09		\$49,000	\$29,900	61%		
7	5	L	02/09		\$52,000	\$32,200	62%		
8	6	L	09/09		\$45,000	\$28,800	64%		
9	7	L	05/09		\$34,500	\$22,400	65%		
10	8	L	07/09		\$43,000	\$28,500	66%		
11	9	L	07/09		\$38,000	\$25,800	68%		
12	10	L	08/09		\$42,000	\$28,600	68%		
13	11	L	06/09		\$32,500	\$23,400	72%		
14		L	04/09		\$37,000	\$27,700	75%		Outliers
15		L	03/09		\$34,900	\$26,500	76%		
Totals					\$647,500	\$397,200			

Weighted Average Ratio: \$ 397,200 ÷ \$647,500 = 61%
Outliers **15** **x** **15%** = **2**
Average Ratio: **690** ÷ **11** = **63**
 Average Deviation:
 Quality Rating:

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	09/09		\$315,500	\$167,200	53%		Outliers
2		R	11/09		\$258,000	\$149,600	58%		
3		R	02/09		\$226,500	\$140,400	62%		
4	1	R	05/09		\$278,900	\$175,700	63%		
5	2	R	12/09		\$198,000	\$126,700	64%		
6	3	R	08/09		\$269,000	\$172,200	64%		
7	4	R	02/09		\$205,000	\$133,000	65%		
8	5	R	05/09		\$188,000	\$124,000	66%		
9	6	R	04/09		\$322,000	\$212,500	66%		
10	7	R	06/09		\$164,500	\$111,900	68%		
11	8	R	11/09		\$305,000	\$210,500	69%		
12	9	R	02/09		\$139,000	\$97,000	70%		
13	10	R	01/09		\$297,500	\$208,200	70%		
14	11	R	10/09		\$162,500	\$115,400	71%		
15	12	R	03/09		\$292,000	\$210,200	72%		
16	13	R	08/09		\$178,000	\$131,700	74%		
17	14	R	01/09		\$195,000	\$150,000	77%		
18	15	R	05/09		\$270,000	\$207,900	77%		
19	16	R	12/09		\$284,900	\$222,200	78%		
20	17	R	08/09		\$136,000	\$108,800	80%	1194	1194
21		R	11/09		\$265,000	\$225,200	85%		Outliers
22		R	03/09		\$142,500	\$128,300	90%		
23		R	09/09		\$162,000	\$153,900	95%		
Totals					\$5,254,800	\$3,682,500			

Weighted Average Ratio: \$3,682,500 ÷ \$5,254,800 = 70%
 Outliers: **23** x **15%** = **3.45**
 Average Ratio: **1194** ÷ **17** = **70**
 Average Deviation:
 Quality Rating:

RATIO STUDY PROBLEM 2 (SOLUTIONS)

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%	18	Outliers
2		L	04/09		\$46,000	\$22,100	48%	15	
3	1	L	03/09		\$39,700	\$19,500	49%	14	
4	2	L	06/09		\$65,000	\$35,800	55%	8	
5	3	L	09/09		\$40,000	\$24,000	60%	3	
6	4	L	10/09		\$49,000	\$29,900	61%	2	Mean 63%
7	5	L	02/09		\$52,000	\$32,200	62%	1	
8	6	L	09/09		\$45,000	\$28,800	64%	1	
9	7	L	05/09		\$34,500	\$22,400	65%	2	
10	8	L	07/09		\$43,000	\$28,500	66%	3	
11	9	L	07/09		\$38,000	\$25,800	68%	5	690
12	10	L	08/09		\$42,000	\$28,600	68%	5	
13	11	L	06/09		\$32,500	\$23,400	72%	9	
14		L	04/09		\$37,000	\$27,700	75%	12	Outliers
15		L	03/09		\$34,900	\$26,500	76%	13	
Totals					\$647,500	\$397,200		111	

Weighted Average Ratio:	\$	397,200	÷	\$647,500	=	61%
Outliers		15	x	15%	=	2
Average Ratio:		690	÷	11	=	63
Average Deviation:		111	÷	15	=	7.4
Quality Rating:		7.4	÷	63	=	12

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	09/09		\$315,500	\$167,200	53%	17	Outliers
2		R	11/09		\$258,000	\$149,600	58%	12	
3		R	02/09		\$226,500	\$140,400	62%	8	
4	1	R	05/09		\$278,900	\$175,700	63%	7	
5	2	R	12/09		\$198,000	\$126,700	64%	6	
6	3	R	08/09		\$269,000	\$172,200	64%	6	
7	4	R	02/09		\$205,000	\$133,000	65%	5	
8	5	R	05/09		\$188,000	\$124,000	66%	4	
9	6	R	04/09		\$322,000	\$212,500	66%	4	
10	7	R	06/09		\$164,500	\$111,900	68%	2	Mean
11	8	R	11/09		\$305,000	\$210,500	69%	1	70%
12	9	R	02/09		\$139,000	\$97,000	70%	0	
13	10	R	01/09		\$297,500	\$208,200	70%	0	
14	11	R	10/09		\$162,500	\$115,400	71%	1	
15	12	R	03/09		\$292,000	\$210,200	72%	2	
16	13	R	08/09		\$178,000	\$131,700	74%	4	
17	14	R	01/09		\$195,000	\$150,000	77%	7	
18	15	R	05/09		\$270,000	\$207,900	77%	7	
19	16	R	12/09		\$284,900	\$222,200	78%	8	
20	17	R	08/09		\$136,000	\$108,800	80%	10	1194
21		R	11/09		\$265,000	\$225,200	85%	15	Outliers
22		R	03/09		\$142,500	\$128,300	90%	20	
23		R	09/09		\$162,000	\$153,900	95%	25	
Totals					\$5,254,800	\$3,682,500		171	

Weighted Average Ratio: \$3,682,500 ÷ \$5,254,800 = 70%
 Outliers: 23 x 15% = 3.45
 Average Ratio: 1194 ÷ 17 = 70

Average Deviation: **171** ÷ **23** = **7.4**
Quality Rating: **7.4** ÷ **70** = **11**

RATIO STUDY PROBLEM 2A: Land Study (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	L	12/09	\$48,900	\$22,000	45%	
2	L	04/09	\$46,000	\$22,100	48%	
3	L	03/09	\$39,700	\$19,500	49%	
4	L	06/09	\$65,000	\$35,800	55%	
5	L	09/09	\$40,000	\$24,000	60%	
6	L	10/09	\$49,000	\$29,900	61%	
7	L	02/09	\$52,000	\$32,200	62%	
8	L	09/09	\$45,000	\$28,800	64%	
9	L	05/09	\$34,500	\$22,400	65%	
10	L	07/09	\$43,000	\$28,500	66%	
11	L	07/09	\$38,000	\$25,800	68%	
12	L	08/09	\$42,000	\$28,600	68%	
13	L	06/09	\$32,500	\$23,400	72%	
14	L	04/09	\$37,000	\$27,700	75%	
15	L	03/09	\$34,900	\$26,500	76%	

Totals

Weighted Average Ratio:**Outliers:****Average Ratio:****Average Deviation:****Quality Rating:**

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	L	12/09	\$48,900	\$22,000	45%	
2	L	04/09	\$46,000	\$22,100	48%	
3	L	03/09	\$39,700	\$19,500	49%	
4	L	06/09	\$65,000	\$35,800	55%	
5	L	09/09	\$40,000	\$24,000	60%	
6	L	10/09	\$49,000	\$29,900	61%	
7	L	02/09	\$52,000	\$32,200	62%	
8	L	09/09	\$45,000	\$28,800	64%	
9	L	05/09	\$34,500	\$22,400	65%	
10	L	07/09	\$43,000	\$28,500	66%	
11	L	07/09	\$38,000	\$25,800	68%	
12	L	08/09	\$42,000	\$28,600	68%	
13	L	06/09	\$32,500	\$23,400	72%	
14	L	04/09	\$37,000	\$27,700	75%	
15	L	03/09	\$34,900	\$26,500	76%	
Totals			\$647,500	\$397,200		

Weighted Average Ratio:

$$\frac{\$397,200}{\$647,500} = 61\%$$

Outliers:

Average Ratio:

Average Deviation:

Quality Rating:

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%		Outliers
2		L	04/09		\$46,000	\$22,100	48%		
3	1	L	03/09		\$39,700	\$19,500	49%		
4	2	L	06/09		\$65,000	\$35,800	55%		
5	3	L	09/09		\$40,000	\$24,000	60%		
6	4	L	10/09		\$49,000	\$29,900	61%		
7	5	L	02/09		\$52,000	\$32,200	62%		Mean
8	6	L	09/09		\$45,000	\$28,800	64%		63%
9	7	L	05/09		\$34,500	\$22,400	65%		
10	8	L	07/09		\$43,000	\$28,500	66%		
11	9	L	07/09		\$38,000	\$25,800	68%		
12	10	L	08/09		\$42,000	\$28,600	68%		
13	11	L	06/09		\$32,500	\$23,400	72%		690
14		L	04/09		\$37,000	\$27,700	75%		Outliers
15		L	03/09		\$34,900	\$26,500	76%		
Totals					\$647,500	\$397,200			

Weighted Average Ratio:

$$\$397,200 \div \$647,500 = 61\%$$

Outliers:

$$15 \times 0.15 = 2$$

Average Ratio:

$$690 \div 11 = 63$$

Average Deviation:

$$\div =$$

Quality Rating:

$$\div =$$

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%	18	Outliers
2		L	04/09		\$46,000	\$22,100	48%	15	
3	1	L	03/09		\$39,700	\$19,500	49%	14	
4	2	L	06/09		\$65,000	\$35,800	55%	8	
5	3	L	09/09		\$40,000	\$24,000	60%	3	
6	4	L	10/09		\$49,000	\$29,900	61%	2	
7	5	L	02/09		\$52,000	\$32,200	62%	1	Mean
8	6	L	09/09		\$45,000	\$28,800	64%	1	63%
9	7	L	05/09		\$34,500	\$22,400	65%	2	
10	8	L	07/09		\$43,000	\$28,500	66%	3	
11	9	L	07/09		\$38,000	\$25,800	68%	5	
12	10	L	08/09		\$42,000	\$28,600	68%	5	
13	11	L	06/09		\$32,500	\$23,400	72%	9	690
14		L	04/09		\$37,000	\$27,700	75%	12	Outliers
15		L	03/09		\$34,900	\$26,500	76%	13	
Totals					\$647,500	\$397,200		111	

Weighted Average Ratio: \$397,200 ÷ \$647,500 = **61%**
 Outliers: 15 X 0.15 = **2**
 Average Ratio: 690 ÷ 11 = **63**
Average Deviation: **111** ÷ **15** = **7.3**
 Quality Rating: ÷ =

RATIO STUDY PROBLEM 2A: Land Study (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1		L 12/09	\$48,900	\$22,000	45%	18
2		L 04/09	\$46,000	\$22,100	48%	15
3	1	L 03/09	\$39,700	\$19,500	49%	14
4	2	L 06/09	\$65,000	\$35,800	55%	8
5	3	L 09/09	\$40,000	\$24,000	60%	3
6	4	L 10/09	\$49,000	\$29,900	61%	2
7	5	L 02/09	\$52,000	\$32,200	62%	1
8	6	L 09/09	\$45,000	\$28,800	64%	1
9	7	L 05/09	\$34,500	\$22,400	65%	2
10	8	L 07/09	\$43,000	\$28,500	66%	3
11	9	L 07/09	\$38,000	\$25,800	68%	5
12	10	L 08/09	\$42,000	\$28,600	68%	5
13	11	L 06/09	\$32,500	\$23,400	72%	9
14		L 04/09	\$37,000	\$27,700	75%	12
15		L 03/09	\$34,900	\$26,500	76%	13
Totals			\$647,500	\$397,200		111

Weighted Average Ratio:	\$397,200	÷	\$647,500	=	61%
Outliers:	15	X	0.15	=	2
Average Ratio:	690	÷	11	=	63
Average Deviation:	111	÷	15	=	7.4
Quality Rating:	7.4	÷	63	=	12

RATIO STUDY PROBLEM 2A: Land Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		L	12/09		\$48,900	\$22,000	45%	18	Outliers
2		L	04/09		\$46,000	\$22,100	48%	15	
3	1	L	03/09		\$39,700	\$19,500	49%	14	
4	2	L	06/09		\$65,000	\$35,800	55%	8	
5	3	L	09/09		\$40,000	\$24,000	60%	3	
6	4	L	10/09		\$49,000	\$29,900	61%	2	
7	5	L	02/09		\$52,000	\$32,200	62%	1	Mean
8	6	L	09/09		\$45,000	\$28,800	64%	1	63%
9	7	L	05/09		\$34,500	\$22,400	65%	2	
10	8	L	07/09		\$43,000	\$28,500	66%	3	
11	9	L	07/09		\$38,000	\$25,800	68%	5	
12	10	L	08/09		\$42,000	\$28,600	68%	5	
13	11	L	06/09		\$32,500	\$23,400	72%	9	690
14		L	04/09		\$37,000	\$27,700	75%	12	Outliers
15		L	03/09		\$34,900	\$26,500	76%	13	
Totals					\$647,500	\$397,200		111	

Weighted Average Ratio:	61% (397,200/647,500)
Average Ratio:	63% (690/11)
Average Deviation:	7.3 (110/15)
Quality Rating:	12 (7.3/63)

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	R	09/09	\$315,500	\$167,200	53%	
2	R	11/09	\$258,000	\$149,600	58%	
3	R	02/09	\$226,500	\$140,400	62%	
4	R	05/09	\$278,900	\$175,700	63%	
5	R	12/09	\$198,000	\$126,700	64%	
6	R	08/09	\$269,000	\$172,200	64%	
7	R	02/09	\$205,000	\$133,000	65%	
8	R	05/09	\$188,000	\$124,000	66%	
9	R	04/09	\$322,000	\$212,500	66%	
10	R	06/09	\$164,500	\$111,900	68%	
11	R	11/09	\$305,000	\$210,500	69%	
12	R	02/09	\$139,000	\$97,000	70%	
13	R	01/09	\$297,500	\$208,200	70%	
14	R	10/09	\$162,500	\$115,400	71%	
15	R	03/09	\$292,000	\$210,200	72%	
16	R	08/09	\$178,000	\$131,700	74%	
17	R	01/09	\$195,000	\$150,000	77%	
18	R	05/09	\$270,000	\$207,900	77%	
19	R	12/09	\$284,900	\$222,200	78%	
20	R	08/09	\$136,000	\$108,800	80%	
21	R	11/09	\$265,000	\$225,200	85%	
22	R	03/09	\$142,500	\$128,300	90%	
23	R	09/09	\$162,000	\$153,900	95%	

Totals

Weighted Average Ratio:**Outliers:****Average Ratio:****Average Deviation:****Quality Rating:**

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	R	09/09	\$315,500	\$167,200	53%	
2	R	11/09	\$258,000	\$149,600	58%	
3	R	02/09	\$226,500	\$140,400	62%	
4	R	05/09	\$278,900	\$175,700	63%	
5	R	12/09	\$198,000	\$126,700	64%	
6	R	08/09	\$269,000	\$172,200	64%	
7	R	02/09	\$205,000	\$133,000	65%	
8	R	05/09	\$188,000	\$124,000	66%	
9	R	04/09	\$322,000	\$212,500	66%	
10	R	06/09	\$164,500	\$111,900	68%	
11	R	11/09	\$305,000	\$210,500	69%	
12	R	02/09	\$139,000	\$97,000	70%	
13	R	01/09	\$297,500	\$208,200	70%	
14	R	10/09	\$162,500	\$115,400	71%	
15	R	03/09	\$292,000	\$210,200	72%	
16	R	08/09	\$178,000	\$131,700	74%	
17	R	01/09	\$195,000	\$150,000	77%	
18	R	05/09	\$270,000	\$207,900	77%	
19	R	12/09	\$284,900	\$222,200	78%	
20	R	08/09	\$136,000	\$108,800	80%	
21	R	11/09	\$265,000	\$225,200	85%	
22	R	03/09	\$142,500	\$128,300	90%	
23	R	09/09	\$162,000	\$153,900	95%	
Totals			\$5,254,800	\$3,682,500		

Weighted Average Ratio:

\$3,682,500

÷

\$5,254,800

=

70%

Outliers:

Average Ratio:

Average Deviation:

Quality Rating:

RATIO STUDY PROBLEM 2B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1		R 09/09	\$315,500	\$167,200	53%	
2		R 11/09	\$258,000	\$149,600	58%	
3		R 02/09	\$226,500	\$140,400	62%	
4	1	R 05/09	\$278,900	\$175,700	63%	
5	2	R 12/09	\$198,000	\$126,700	64%	
6	3	R 08/09	\$269,000	\$172,200	64%	
7	4	R 02/09	\$205,000	\$133,000	65%	
8	5	R 05/09	\$188,000	\$124,000	66%	
9	6	R 04/09	\$322,000	\$212,500	66%	
10	7	R 06/09	\$164,500	\$111,900	68%	
11	8	R 11/09	\$305,000	\$210,500	69%	
12	9	R 02/09	\$139,000	\$97,000	70%	
13	10	R 01/09	\$297,500	\$208,200	70%	
14	11	R 10/09	\$162,500	\$115,400	71%	
15	12	R 03/09	\$292,000	\$210,200	72%	
16	13	R 08/09	\$178,000	\$131,700	74%	
17	14	R 01/09	\$195,000	\$150,000	77%	
18	15	R 05/09	\$270,000	\$207,900	77%	
19	16	R 12/09	\$284,900	\$222,200	78%	
20	17	R 08/09	\$136,000	\$108,800	80%	
21		R 11/09	\$265,000	\$225,200	85%	
22		R 03/09	\$142,500	\$128,300	90%	
23		R 09/09	\$162,000	\$153,900	95%	
Totals			\$5,254,800	\$3,682,500		

Weighted Average Ratio:	\$3,682,500	÷	\$5,254,800	=	70%
Outliers:	23	x	0.15	=	3
Average Ratio:	1194	÷	17	=	70
Average Deviation:		÷		=	
Quality Rating:		÷		=	

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R 09/09	\$315,500	\$167,200	53%	17	Outliers
2		R 11/09	\$258,000	\$149,600	58%	12	
3		R 02/09	\$226,500	\$140,400	62%	8	
4	1	R 05/09	\$278,900	\$175,700	63%	7	
5	2	R 12/09	\$198,000	\$126,700	64%	6	
6	3	R 08/09	\$269,000	\$172,200	64%	6	
7	4	R 02/09	\$205,000	\$133,000	65%	5	
8	5	R 05/09	\$188,000	\$124,000	66%	4	
9	6	R 04/09	\$322,000	\$212,500	66%	4	
10	7	R 06/09	\$164,500	\$111,900	68%	2	
11	8	R 11/09	\$305,000	\$210,500	69%	1	Mean
12	9	R 02/09	\$139,000	\$97,000	70%	0	70%
13	10	R 01/09	\$297,500	\$208,200	70%	0	
14	11	R 10/09	\$162,500	\$115,400	71%	1	
15	12	R 03/09	\$292,000	\$210,200	72%	2	
16	13	R 08/09	\$178,000	\$131,700	74%	4	
17	14	R 01/09	\$195,000	\$150,000	77%	7	
18	15	R 05/09	\$270,000	\$207,900	77%	7	
19	16	R 12/09	\$284,900	\$222,200	78%	8	
20	17	R 08/09	\$136,000	\$108,800	80%	10	1194
21		R 11/09	\$265,000	\$225,200	85%	15	Outliers
22		R 03/09	\$142,500	\$128,300	90%	20	
23		R 09/09	\$162,000	\$153,900	95%	25	
Totals			\$5,254,800	\$3,682,500		171	

Weighted Average Ratio:	\$3,682,500	÷	\$5,254,800	=	70%
Outliers:	23	×	0.15	=	3
Average Ratio:	1194	÷	17	=	70
Average Deviation:	171	÷	23	=	7.4
Quality Rating:		÷		=	

RATIO STUDY PROBLEM 2B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		R	09/09		\$315,500	\$167,200	53%	17	Outliers
2		R	11/09		\$258,000	\$149,600	58%	12	
3		R	02/09		\$226,500	\$140,400	62%	8	
4	1	R	05/09		\$278,900	\$175,700	63%	7	
5	2	R	12/09		\$198,000	\$126,700	64%	6	
6	3	R	08/09		\$269,000	\$172,200	64%	6	
7	4	R	02/09		\$205,000	\$133,000	65%	5	
8	5	R	05/09		\$188,000	\$124,000	66%	4	
9	6	R	04/09		\$322,000	\$212,500	66%	4	
10	7	R	06/09		\$164,500	\$111,900	68%	2	
11	8	R	11/09		\$305,000	\$210,500	69%	1	Mean
12	9	R	02/09		\$139,000	\$97,000	70%	0	70%
13	10	R	01/09		\$297,500	\$208,200	70%	0	
14	11	R	10/09		\$162,500	\$115,400	71%	1	
15	12	R	03/09		\$292,000	\$210,200	72%	2	
16	13	R	08/09		\$178,000	\$131,700	74%	4	
17	14	R	01/09		\$195,000	\$150,000	77%	7	
18	15	R	05/09		\$270,000	\$207,900	77%	7	
19	16	R	12/09		\$284,900	\$222,200	78%	8	
20	17	R	08/09		\$136,000	\$108,800	80%	10	1194
21		R	11/09		\$265,000	\$225,200	85%	15	Outliers
22		R	03/09		\$142,500	\$128,300	90%	20	
23		R	09/09		\$162,000	\$153,900	95%	25	
Totals					\$5,254,800	\$3,682,500		171	

Weighted Average Ratio:	\$3,682,500	÷	\$5,254,800	=	70%
Outliers:	23	x	0.15	=	3
Average Ratio:	1194	÷	17	=	70
Average Deviation:	171	÷	23	=	7.4
Quality Rating:	7.4	÷	70	=	11

RATIO STUDY PROBLEM 2B: Residential Study (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1		R	09/09	\$315,500	\$167,200	53% 17
2		R	11/09	\$258,000	\$149,600	58% 12
3		R	02/09	\$226,500	\$140,400	62% 8
4	1	R	05/09	\$278,900	\$175,700	63% 7
5	2	R	12/09	\$198,000	\$126,700	64% 6
6	3	R	08/09	\$269,000	\$172,200	64% 6
7	4	R	02/09	\$205,000	\$133,000	65% 5
8	5	R	05/09	\$188,000	\$124,000	66% 4
9	6	R	04/09	\$322,000	\$212,500	66% 4
10	7	R	06/09	\$164,500	\$111,900	68% 2
11	8	R	11/09	\$305,000	\$210,500	69% 1
12	9	R	02/09	\$139,000	\$97,000	70% 0
13	10	R	01/09	\$297,500	\$208,200	70% 0
14	11	R	10/09	\$162,500	\$115,400	71% 1
15	12	R	03/09	\$292,000	\$210,200	72% 2
16	13	R	08/09	\$178,000	\$131,700	74% 4
17	14	R	01/09	\$195,000	\$150,000	77% 7
18	15	R	05/09	\$270,000	\$207,900	77% 7
19	16	R	12/09	\$284,900	\$222,200	78% 8
20	17	R	08/09	\$136,000	\$108,800	80% 10
21		R	11/09	\$265,000	\$225,200	85% 15
22		R	03/09	\$142,500	\$128,300	90% 20
23		R	09/09	\$162,000	\$153,900	95% 25
Totals			\$5,254,800	\$3,682,500	171	

Weighted Average Ratio:	70% (3,682,500/5,254,800)
Average Ratio:	70% (1194/17)
Average Deviation:	7.4 (171/23)
Quality Rating:	11 (7.4/70)

RATIO STUDY PROBLEM 3 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		W	06/09		\$427,500	\$171,000	40%		
2		W	07/09		\$376,000	\$150,400	40%		
3		R	03/09		\$259,000	\$106,200	41%		
4		W	11/09		\$419,000	\$175,900	42%		
5		R	10/09		\$249,000	\$109,600	44%		
6	1	W	02/09		\$400,000	\$180,100	45%		
7	2	W	05/09		\$365,000	\$171,500	47%		
8	3	R	05/09		\$245,000	\$117,600	48%		
9	4	W	04/09		\$395,000	\$189,600	48%		
10	5	R	10/09		\$222,500	\$111,300	50%		
11	6	W	09/09		\$399,000	\$203,500	51%		
12	7	W	02/09		\$445,000	\$235,800	53%		
13	8	W	12/09		\$386,900	\$212,800	55%		
14	9	W	04/09		\$355,000	\$195,200	55%		
15	10	W	07/09		\$349,000	\$198,900	57%		
16	11	R	06/09		\$214,500	\$128,700	60%		
17	12	W	11/09		\$389,000	\$241,200	62%		
18	13	W	12/09		\$345,500	\$214,200	62%		
19	14	R	03/09		\$188,000	\$122,200	65%		
20	15	W	02/09		\$375,000	\$243,700	65%		
21	16	R	06/09		\$139,000	\$94,500	68%		
22	17	W	06/09		\$333,000	\$229,800	69%		
23	18	R	04/09		\$177,900	\$124,500	70%		
24	19	R	08/09		\$227,000	\$163,400	72%		
25	20	R	10/09		\$199,000	\$149,200	75%		
26	21	R	07/09		\$195,000	\$154,000	79%		
27	22	R	05/09		\$134,500	\$110,300	82%		
28	23	R	04/09		\$250,000	\$210,000	84%		
29	24	R	06/09		\$148,000	\$125,800	85%		
30		R	12/09		\$164,500	\$141,500	86%		
31		R	09/09		\$132,000	\$116,200	88%		
32		R	11/09		\$129,000	\$117,400	91%		
33		R	07/09		\$142,500	\$131,100	92%		
34		R	04/09		\$130,000	\$123,500	95%		

Totals

Weighted Average Ratio:**Outliers:****Average Ratio:****Average Deviation:****Quality Rating:**

RATIO STUDY PROBLEM 3 (SOLUTIONS)

Rev 2011

ITEM NO.	CLASS	MO/YR	SALE PRICE	ASSESSMENT	RATIO	DEV.
1	W	06/09	\$427,500	\$171,000	40%	
2	W	07/09	\$376,000	\$150,400	40%	
3	R	03/09	\$259,000	\$106,200	41%	
4	W	11/09	\$419,000	\$175,900	42%	
5	R	10/09	\$249,000	\$109,600	44%	
6	W	02/09	\$400,000	\$180,100	45%	
7	W	05/09	\$365,000	\$171,500	47%	
8	R	05/09	\$245,000	\$117,600	48%	
9	W	04/09	\$395,000	\$189,600	48%	
10	R	10/09	\$222,500	\$111,300	50%	
11	W	09/09	\$399,000	\$203,500	51%	
12	W	02/09	\$445,000	\$235,800	53%	
13	W	12/09	\$386,900	\$212,800	55%	
14	W	04/09	\$355,000	\$195,200	55%	
15	W	07/09	\$349,000	\$198,900	57%	
16	R	06/09	\$214,500	\$128,700	60%	
17	W	11/09	\$389,000	\$241,200	62%	
18	W	12/09	\$345,500	\$214,200	62%	
19	R	03/09	\$188,000	\$122,200	65%	
20	W	02/09	\$375,000	\$243,700	65%	
21	R	06/09	\$139,000	\$94,500	68%	
22	W	06/09	\$333,000	\$229,800	69%	
23	R	04/09	\$177,900	\$124,500	70%	
24	R	08/09	\$227,000	\$163,400	72%	
25	R	10/09	\$199,000	\$149,200	75%	
26	R	07/09	\$195,000	\$154,000	79%	
27	R	05/09	\$134,500	\$110,300	82%	
28	R	04/09	\$250,000	\$210,000	84%	
29	R	06/09	\$148,000	\$125,800	85%	
30	R	12/09	\$164,500	\$141,500	86%	
31	R	09/09	\$132,000	\$116,200	88%	
32	R	11/09	\$129,000	\$117,400	91%	
33	R	07/09	\$142,500	\$131,100	92%	
34	R	04/09	\$130,000	\$123,500	95%	
Totals			\$9,306,300	\$5,470,600		

Weighted Average Ratio: **\$5,470,600** ÷ **\$9,306,300** = **59%**
 Outliers: X = **0**
 Average Ratio: ÷ = **#DIV/0!**
 Average Deviation: ÷ = **#DIV/0!**
 Quality Rating: ÷ = **#DIV/0!**

RATIO STUDY PROBLEM 3 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		W	06/09		\$427,500	\$171,000	40%		Outliers
2		W	07/09		\$376,000	\$150,400	40%		
3		R	03/09		\$259,000	\$106,200	41%		
4		W	11/09		\$419,000	\$175,900	42%		
5		R	10/09		\$249,000	\$109,600	44%		
6	1	W	02/09		\$400,000	\$180,100	45%		
7	2	W	05/09		\$365,000	\$171,500	47%		
8	3	R	05/09		\$245,000	\$117,600	48%		
9	4	W	04/09		\$395,000	\$189,600	48%		
10	5	R	10/09		\$222,500	\$111,300	50%		
11	6	W	09/09		\$399,000	\$203,500	51%		
12	7	W	02/09		\$445,000	\$235,800	53%		
13	8	W	12/09		\$386,900	\$212,800	55%		
14	9	W	04/09		\$355,000	\$195,200	55%		
15	10	W	07/09		\$349,000	\$198,900	57%		
16	11	R	06/09		\$214,500	\$128,700	60%		Mean
17	12	W	11/09		\$389,000	\$241,200	62%		63%
18	13	W	12/09		\$345,500	\$214,200	62%		
19	14	R	03/09		\$188,000	\$122,200	65%		
20	15	W	02/09		\$375,000	\$243,700	65%		
21	16	R	06/09		\$139,000	\$94,500	68%		
22	17	W	06/09		\$333,000	\$229,800	69%		
23	18	R	04/09		\$177,900	\$124,500	70%		
24	19	R	08/09		\$227,000	\$163,400	72%		
25	20	R	10/09		\$199,000	\$149,200	75%		
26	21	R	07/09		\$195,000	\$154,000	79%		
27	22	R	05/09		\$134,500	\$110,300	82%		
28	23	R	04/09		\$250,000	\$210,000	84%		
29	24	R	06/09		\$148,000	\$125,800	85%		1507
30		R	12/09		\$164,500	\$141,500	86%		Outliers
31		R	09/09		\$132,000	\$116,200	88%		
32		R	11/09		\$129,000	\$117,400	91%		
33		R	07/09		\$142,500	\$131,100	92%		
34		R	04/09		\$130,000	\$123,500	95%		
Totals					\$9,306,300	\$5,470,600			

Weighted Average Ratio:	\$5,470,600	÷	\$9,306,300	=	59%
Outliers:	34	x	0.15	=	5
Average Ratio:	1507	÷	24	=	63
Average Deviation:		÷		=	####
Quality Rating:		÷		=	####

RATIO STUDY PROBLEM 3 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		W	06/09		\$427,500	\$171,000	40%	23	Outliers
2		W	07/09		\$376,000	\$150,400	40%	23	
3		R	03/09		\$259,000	\$106,200	41%	22	
4		W	11/09		\$419,000	\$175,900	42%	21	
5		R	10/09		\$249,000	\$109,600	44%	19	
6	1	W	02/09		\$400,000	\$180,100	45%	18	
7	2	W	05/09		\$365,000	\$171,500	47%	16	
8	3	R	05/09		\$245,000	\$117,600	48%	15	
9	4	W	04/09		\$395,000	\$189,600	48%	15	
10	5	R	10/09		\$222,500	\$111,300	50%	13	
11	6	W	09/09		\$399,000	\$203,500	51%	12	
12	7	W	02/09		\$445,000	\$235,800	53%	10	
13	8	W	12/09		\$386,900	\$212,800	55%	8	
14	9	W	04/09		\$355,000	\$195,200	55%	8	
15	10	W	07/09		\$349,000	\$198,900	57%	6	
16	11	R	06/09		\$214,500	\$128,700	60%	3	
17	12	W	11/09		\$389,000	\$241,200	62%	1	Mean
18	13	W	12/09		\$345,500	\$214,200	62%	1	63%
19	14	R	03/09		\$188,000	\$122,200	65%	2	
20	15	W	02/09		\$375,000	\$243,700	65%	2	
21	16	R	06/09		\$139,000	\$94,500	68%	5	
22	17	W	06/09		\$333,000	\$229,800	69%	6	
23	18	R	04/09		\$177,900	\$124,500	70%	7	
24	19	R	08/09		\$227,000	\$163,400	72%	9	
25	20	R	10/09		\$199,000	\$149,200	75%	12	
26	21	R	07/09		\$195,000	\$154,000	79%	16	
27	22	R	05/09		\$134,500	\$110,300	82%	19	
28	23	R	04/09		\$250,000	\$210,000	84%	21	
29	24	R	06/09		\$148,000	\$125,800	85%	22	1507
30		R	12/09		\$164,500	\$141,500	86%	23	Outliers
31		R	09/09		\$132,000	\$116,200	88%	25	
32		R	11/09		\$129,000	\$117,400	91%	28	
33		R	07/09		\$142,500	\$131,100	92%	29	
34		R	04/09		\$130,000	\$123,500	95%	32	
Totals					\$9,306,300	\$5,470,600		492	

Weighted Average Ratio:	\$5,470,600	÷	\$9,306,300	=	59%
Outliers:	34	X	0.15	=	5
Average Ratio:	1507	÷	24	=	63
Average Deviation:	492	÷	34	=	14.5
Quality Rating:		÷		=	####

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		W	06/09		\$427,500	\$171,000	40%	23	Outliers
2		W	07/09		\$376,000	\$150,400	40%	23	
3		R	03/09		\$259,000	\$106,200	41%	22	
4		W	11/09		\$419,000	\$175,900	42%	21	
5		R	10/09		\$249,000	\$109,600	44%	19	
6	1	W	02/09		\$400,000	\$180,100	45%	18	
7	2	W	05/09		\$365,000	\$171,500	47%	16	
8	3	R	05/09		\$245,000	\$117,600	48%	15	
9	4	W	04/09		\$395,000	\$189,600	48%	15	
10	5	R	10/09		\$222,500	\$111,300	50%	13	
11	6	W	09/09		\$399,000	\$203,500	51%	12	
12	7	W	02/09		\$445,000	\$235,800	53%	10	
13	8	W	12/09		\$386,900	\$212,800	55%	8	
14	9	W	04/09		\$355,000	\$195,200	55%	8	
15	10	W	07/09		\$349,000	\$198,900	57%	6	
16	11	R	06/09		\$214,500	\$128,700	60%	3	
17	12	W	11/09		\$389,000	\$241,200	62%	1	Mean
18	13	W	12/09		\$345,500	\$214,200	62%	1	63%
19	14	R	03/09		\$188,000	\$122,200	65%	2	
20	15	W	02/09		\$375,000	\$243,700	65%	2	
21	16	R	06/09		\$139,000	\$94,500	68%	5	
22	17	W	06/09		\$333,000	\$229,800	69%	6	
23	18	R	04/09		\$177,900	\$124,500	70%	7	
24	19	R	08/09		\$227,000	\$163,400	72%	9	
25	20	R	10/09		\$199,000	\$149,200	75%	12	
26	21	R	07/09		\$195,000	\$154,000	79%	16	
27	22	R	05/09		\$134,500	\$110,300	82%	19	
28	23	R	04/09		\$250,000	\$210,000	84%	21	
29	24	R	06/09		\$148,000	\$125,800	85%	22	1507
30		R	12/09		\$164,500	\$141,500	86%	23	Outliers
31		R	09/09		\$132,000	\$116,200	88%	25	
32		R	11/09		\$129,000	\$117,400	91%	28	
33		R	07/09		\$142,500	\$131,100	92%	29	
34		R	04/09		\$130,000	\$123,500	95%	32	
Totals					\$9,306,300	\$5,470,600		492	

Weighted Average Ratio:	\$5,470,600	÷	\$9,306,300	=	59%
Outliers:	34	X	0.15	=	5
Average Ratio:	1507	÷	24	=	63
Average Deviation:	492	÷	34	=	14.5
Quality Rating:	14.5	÷	63	=	23

RATIO STUDY PROBLEM 3 (SOLUTIONS)

Rev 2011

ITEM NO.		CLASS	MO/YR		SALE PRICE	ASSESSMENT	RATIO	DEV.	
1		W	06/09		\$427,500	\$171,000	40%	23	
2		W	07/09		\$376,000	\$150,400	40%	23	
3		R	03/09		\$259,000	\$106,200	41%	22	Outliers
4		W	11/09		\$419,000	\$175,900	42%	21	
5		R	10/09		\$249,000	\$109,600	44%	19	
6	1	W	02/09		\$400,000	\$180,100	45%	18	
7	2	W	05/09		\$365,000	\$171,500	47%	16	
8	3	R	05/09		\$245,000	\$117,600	48%	15	
9	4	W	04/09		\$395,000	\$189,600	48%	15	
10	5	R	10/09		\$222,500	\$111,300	50%	13	
11	6	W	09/09		\$399,000	\$203,500	51%	12	
12	7	W	02/09		\$445,000	\$235,800	53%	10	
13	8	W	12/09		\$386,900	\$212,800	55%	8	
14	9	W	04/09		\$355,000	\$195,200	55%	8	
15	10	W	07/09		\$349,000	\$198,900	57%	6	
16	11	R	06/09		\$214,500	\$128,700	60%	3	
17	12	W	11/09		\$389,000	\$241,200	62%	1	
18	13	W	12/09		\$345,500	\$214,200	62%	1	Mean
19	14	R	03/09		\$188,000	\$122,200	65%	2	63%
20	15	W	02/09		\$375,000	\$243,700	65%	2	
21	16	R	06/09		\$139,000	\$94,500	68%	5	
22	17	W	06/09		\$333,000	\$229,800	69%	6	
23	18	R	04/09		\$177,900	\$124,500	70%	7	
24	19	R	08/09		\$227,000	\$163,400	72%	9	
25	20	R	10/09		\$199,000	\$149,200	75%	12	
26	21	R	07/09		\$195,000	\$154,000	79%	16	
27	22	R	05/09		\$134,500	\$110,300	82%	19	
28	23	R	04/09		\$250,000	\$210,000	84%	21	
29	24	R	06/09		\$148,000	\$125,800	85%	22	1507
30		R	12/09		\$164,500	\$141,500	86%	23	
31		R	09/09		\$132,000	\$116,200	88%	25	
32		R	11/09		\$129,000	\$117,400	91%	28	Outliers
33		R	07/09		\$142,500	\$131,100	92%	29	
34		R	04/09		\$130,000	\$123,500	95%	32	
Totals					\$9,306,300	\$5,470,600		492	

Weighted Average Ratio:	59% (5,470,600/9,306,300)
Average Ratio:	63% (1507/24)
Average Deviation:	14.5 (492/34)
Quality Rating:	23 (14.5/63)