

Rational Data Analysis--Getting the Best Return

May 19, 2010

1

Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.7706	4 / (1 -p-bar)	4 / (1 - p-bar)
	5	18

Month	p-value	Numerator	Denominator		
1	0.7600	19	25		
2	0.9630	26	27		
3	0.7368	14	19		
4	0.8571	24	28		
5	0.8788	29	33		
6	0.7308	19	26		
7	0.7949	31	39		
8	0.8600	43	50		
9	0.8636	38	44		
10	0.8718	34	39		
11	0.8889	32	36		
12	0.6818	30	44		
13	0.6000	12	20		
14	0.8750	35	40		
15	0.8800	22	25		
16	0.6552	19	29		
17	0.5000	12	24		
18	0.5897	23	39		
19	0.9000	45	50		
20	0.5313	17	32		
21	0.5806	18	31		
22	0.4800	12	25		
23	0.7778	21	27		
24	0.8919	33	37		

		▼	▼		
Total:	Total:	608	789		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

		Formula A		Formula B	
		p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?	
		0.2348	1 / p-bar	4 / p-bar	
			5	18	
Month	p-value	Numerator	Denominator		
1	0.1667	3	18		
2	0.1053	2	19		
3	0.3077	4	13		Small subgroup. Cannot identify outliers!
4	0.1765	3	17		Small subgroup. Cannot identify outliers!
5	0.2500	5	20		
6	0.1875	3	16		Small subgroup. Cannot identify outliers!
7	0.3158	6	19		
8	0.2353	4	17		Small subgroup. Cannot identify outliers!
9	0.2727	3	11		Small subgroup. Cannot identify outliers!
10	0.3333	4	12		Small subgroup. Cannot identify outliers!
11	0.1818	2	11		Small subgroup. Cannot identify outliers!
12	0.4167	5	12		Small subgroup. Cannot identify outliers!
13	0.3000	3	10		Small subgroup. Cannot identify outliers!
14	0.1667	2	12		Small subgroup. Cannot identify outliers!
15	0.3125	5	16		Small subgroup. Cannot identify outliers!
16	0.2000	4	20		
17	0.3333	3	9		Small subgroup. Cannot identify outliers!
18	0.1667	2	12		Small subgroup. Cannot identify outliers!
19	0.3077	4	13		Small subgroup. Cannot identify outliers!
20	0.3571	5	14		Small subgroup. Cannot identify outliers!
21	0.2105	4	19		
22	0.2222	4	18		
23	0.1667	3	18		
24	0.1250	2	16		Small subgroup. Cannot identify outliers!
Total:	Total:	85	362		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.9384

"Small numbers"? Caution with SPC!
4 / (1 - p-bar)
17

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
65

Month	p-value	Numerator	Denominator	Formula A	Formula B
1	0.9429	66	70		
2	0.9000	63	70		
3	0.9643	81	84		
4	0.9403	63	67		
5	0.9851	66	67		
6	0.9063	58	64		Small subgroup. Cannot identify outliers!
7	0.9014	64	71		
8	0.9531	61	64		Small subgroup. Cannot identify outliers!
9	0.9385	61	65		
10	0.9091	60	66		
11	0.9531	61	64		Small subgroup. Cannot identify outliers!
12	0.9375	60	64		Small subgroup. Cannot identify outliers!
13	0.9403	63	67		
14	0.9538	62	65		
15	0.9375	60	64		Small subgroup. Cannot identify outliers!
16	0.9355	58	62		Small subgroup. Cannot identify outliers!
17	1.0000	62	62		Small subgroup. Cannot identify outliers!
18	0.9032	56	62		Small subgroup. Cannot identify outliers!
19	0.9531	61	64		Small subgroup. Cannot identify outliers!
20	0.9853	67	68		
21	0.9403	63	67		
22	0.9265	63	68		
23	0.9531	61	64		Small subgroup. Cannot identify outliers!
24	0.8571	54	63		Small subgroup. Cannot identify outliers!

	▼	▼
Total:	Total:	1,494
		1,592

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Month	p-value	Numerator	Denominator	Formula A	Formula B
				"Small numbers"? Caution with SPC! 1 / p-bar 2	Subgroup with sufficient power to ID outliers? 4 / p-bar 8
1	0.3333	1	3		Small subgroup. Cannot identify outliers!
2	0.2500	1	4		Small subgroup. Cannot identify outliers!
3	0.5000	1	2		Small subgroup. Cannot identify outliers!
4	0.6000	3	5		Small subgroup. Cannot identify outliers!
5	0.5000	3	6		Small subgroup. Cannot identify outliers!
6	0.3333	1	3		Small subgroup. Cannot identify outliers!
7	0.4000	2	5		Small subgroup. Cannot identify outliers!
8	0.4000	2	5		Small subgroup. Cannot identify outliers!
9	0.5000	2	4		Small subgroup. Cannot identify outliers!
10	0.2500	1	4		Small subgroup. Cannot identify outliers!
11	0.0000	0	1	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
12	1.0000	2	2		Small subgroup. Cannot identify outliers!
13	0.5000	1	2		Small subgroup. Cannot identify outliers!
14	0.0000	0	1	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
15	0.6667	2	3		Small subgroup. Cannot identify outliers!
16	0.5000	1	2		Small subgroup. Cannot identify outliers!
17	0.6000	3	5		Small subgroup. Cannot identify outliers!
18	1.0000	3	3		Small subgroup. Cannot identify outliers!
19	0.5000	1	2		Small subgroup. Cannot identify outliers!
20	0.7500	3	4		Small subgroup. Cannot identify outliers!
21	0.5000	2	4		Small subgroup. Cannot identify outliers!
22	0.5000	1	2		Small subgroup. Cannot identify outliers!
23	0.5000	2	4		Small subgroup. Cannot identify outliers!
24	0.5000	2	4		Small subgroup. Cannot identify outliers!
		▼	▼		
Total:	Total:	40	80		

If p-bar is less than 0.5, data are skewed to the right.
If p-bar is greater than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.8412

"Small numbers"? Caution with SPC!
4 / (1 -p-bar)
7

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
26

Month	p-value	Numerator	Denominator		
1	0.8000	16	20		Small subgroup. Cannot identify outliers!
2	1.0000	21	21		Small subgroup. Cannot identify outliers!
3	0.9130	21	23		Small subgroup. Cannot identify outliers!
4	0.9200	23	25		Small subgroup. Cannot identify outliers!
5	0.8214	23	28		
6	0.8261	19	23		Small subgroup. Cannot identify outliers!
7	0.6571	23	35		
8	0.8500	17	20		Small subgroup. Cannot identify outliers!
9	1.0000	16	16		Small subgroup. Cannot identify outliers!
10	0.5217	12	23		Small subgroup. Cannot identify outliers!
11	0.9474	18	19		Small subgroup. Cannot identify outliers!
12	0.8667	13	15		Small subgroup. Cannot identify outliers!
13	0.9130	21	23		Small subgroup. Cannot identify outliers!
14	0.8400	21	25		Small subgroup. Cannot identify outliers!
15	0.8571	18	21		Small subgroup. Cannot identify outliers!
16	0.8966	26	29		
17	0.7273	8	11		Small subgroup. Cannot identify outliers!
18	0.8261	19	23		Small subgroup. Cannot identify outliers!
19	0.8824	15	17		Small subgroup. Cannot identify outliers!
20	0.9000	27	30		
21	0.9091	20	22		Small subgroup. Cannot identify outliers!
22	0.8333	15	18		Small subgroup. Cannot identify outliers!
23	0.7368	14	19		Small subgroup. Cannot identify outliers!
24	0.8261	19	23		Small subgroup. Cannot identify outliers!

Total: Total: 445
 ▼ ▼
 529

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.8217

"Small numbers"? Caution with SPC!
4 / (1 -p-bar)
6

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
23

Month	p-value	Numerator	Denominator		
1	0.8235	14	17		Small subgroup. Cannot identify outliers!
2	0.8750	21	24		
3	0.8636	19	22		Small subgroup. Cannot identify outliers!
4	0.8571	18	21		Small subgroup. Cannot identify outliers!
5	0.7273	16	22		Small subgroup. Cannot identify outliers!
6	0.5263	10	19		Small subgroup. Cannot identify outliers!
7	0.8750	28	32		
8	0.8235	14	17		Small subgroup. Cannot identify outliers!
9	0.7000	7	10		Small subgroup. Cannot identify outliers!
10	0.7857	11	14		Small subgroup. Cannot identify outliers!
11	0.7333	11	15		Small subgroup. Cannot identify outliers!
12	0.8182	9	11		Small subgroup. Cannot identify outliers!
13	0.8182	18	22		Small subgroup. Cannot identify outliers!
14	0.8261	19	23		
15	0.7895	15	19		Small subgroup. Cannot identify outliers!
16	0.6552	19	29		
17	0.7778	7	9		Small subgroup. Cannot identify outliers!
18	0.7727	17	22		Small subgroup. Cannot identify outliers!
19	0.9231	12	13		Small subgroup. Cannot identify outliers!
20	0.8929	25	28		
21	0.9474	18	19		Small subgroup. Cannot identify outliers!
22	0.9444	17	18		Small subgroup. Cannot identify outliers!
23	0.9333	14	15		Small subgroup. Cannot identify outliers!
24	1.0000	19	19		Small subgroup. Cannot identify outliers!

	▼	▼
Total:	Total:	378
		460

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.7913

"Small numbers"? Caution with SPC!
4 / (1 - p-bar)
5

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
20

Month	p-value	Numerator	Denominator		
1	0.7778	14	18		Small subgroup. Cannot identify outliers!
2	0.7500	12	16		Small subgroup. Cannot identify outliers!
3	0.5385	7	13		Small subgroup. Cannot identify outliers!
4	0.7333	11	15		Small subgroup. Cannot identify outliers!
5	0.8824	15	17		Small subgroup. Cannot identify outliers!
6	0.8000	20	25		
7	0.8966	26	29		
8	0.7500	15	20		
9	0.7407	20	27		
10	1.0000	24	24		
11	0.7391	17	23		
12	0.6667	10	15		Small subgroup. Cannot identify outliers!
13	0.8636	19	22		
14	0.8000	12	15		Small subgroup. Cannot identify outliers!
15	0.9286	13	14		Small subgroup. Cannot identify outliers!
16	0.6207	18	29		
17	0.8750	28	32		
18	0.7284	59	81		
19	0.8235	42	51		
20	0.8529	29	34		
21	0.8108	30	37		
22	0.8462	22	26		
23	0.8500	17	20		
24	0.6000	9	15		Small subgroup. Cannot identify outliers!

Total:	Total:	489	618
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If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.1719

"Small numbers"? Caution with SPC!
1 / p-bar
6

Subgroup with sufficient power to ID outliers?
4 / p-bar
24

Month	p-value	Numerator	Denominator	Formula A	Formula B
1	0.1538	2	13		Small subgroup. Cannot identify outliers!
2	0.2143	3	14		Small subgroup. Cannot identify outliers!
3	0.1333	2	15		Small subgroup. Cannot identify outliers!
4	0.2000	3	15		Small subgroup. Cannot identify outliers!
5	0.1538	2	13		Small subgroup. Cannot identify outliers!
6	0.1333	2	15		Small subgroup. Cannot identify outliers!
7	0.1176	2	17		Small subgroup. Cannot identify outliers!
8	0.1765	3	17		Small subgroup. Cannot identify outliers!
9	0.1111	2	18		Small subgroup. Cannot identify outliers!
10	0.1875	3	16		Small subgroup. Cannot identify outliers!
11	0.1333	2	15		Small subgroup. Cannot identify outliers!
12	0.1333	2	15		Small subgroup. Cannot identify outliers!
13	0.1250	2	16		Small subgroup. Cannot identify outliers!
14	0.3333	4	12		Small subgroup. Cannot identify outliers!
15	0.1176	2	17		Small subgroup. Cannot identify outliers!
16	0.1765	3	17		Small subgroup. Cannot identify outliers!
17	0.1333	2	15		Small subgroup. Cannot identify outliers!
18	0.1333	2	15		Small subgroup. Cannot identify outliers!
19	0.0714	1	14		Small subgroup. Cannot identify outliers!
20	0.2500	1	4	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
21	0.2857	2	7		Small subgroup. Cannot identify outliers!
22	0.6000	3	5	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
23	0.2727	3	11		Small subgroup. Cannot identify outliers!
24	0.5000	2	4	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
		▼	▼		
Total:	Total:	55	320		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.8837

"Small numbers"? Caution with SPC!
4 / (1 - p-bar)
9

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
35

Month	p-value	Numerator	Denominator	Formula A	Formula B
1	0.8000	4	5	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
2	1.0000	1	1	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
3	0.6000	3	5	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
4	0.7500	3	4	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
5	1.0000	7	7	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
6	1.0000	4	4	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
7	0.8667	13	15		Small subgroup. Cannot identify outliers!
8	0.8333	10	12		Small subgroup. Cannot identify outliers!
9	0.9000	9	10		Small subgroup. Cannot identify outliers!
10	0.9444	17	18		Small subgroup. Cannot identify outliers!
11	0.9091	10	11		Small subgroup. Cannot identify outliers!
12	0.8889	8	9		Small subgroup. Cannot identify outliers!
13	1.0000	6	6	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
14	0.6667	2	3	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
15	1.0000	5	5	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
16	0.8571	6	7	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
17	0.9167	11	12		Small subgroup. Cannot identify outliers!
18	0.9643	27	28		Small subgroup. Cannot identify outliers!
19	1.0000	9	9		Small subgroup. Cannot identify outliers!
20	0.7500	9	12		Small subgroup. Cannot identify outliers!
21	0.7500	6	8	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
22	0.8333	5	6	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
23	0.8889	8	9		Small subgroup. Cannot identify outliers!
24	0.7778	7	9		Small subgroup. Cannot identify outliers!

Total:	Total:	190	215
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If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.7012

"Small numbers"? Caution with SPC!
4 / (1 - p-bar)
4

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
14

Month	p-value	Numerator	Denominator		
1	0.9286	13	14		
2	0.5833	7	12		Small subgroup. Cannot identify outliers!
3	0.8462	11	13		Small subgroup. Cannot identify outliers!
4	0.8000	12	15		
5	0.7500	15	20		
6	0.6944	25	36		
7	0.6250	10	16		
8	0.5294	9	17		
9	0.6000	12	20		
10	0.6667	20	30		
11	0.5714	12	21		
12	0.5882	10	17		
13	0.6667	16	24		
14	0.8636	19	22		
15	0.6429	9	14		
16	0.8636	19	22		
17	0.5789	11	19		
18	0.9600	24	25		
19	0.5455	12	22		
20	0.4545	10	22		
21	0.7143	20	28		
22	0.8667	13	15		
23	0.7500	18	24		
24	0.7857	11	14		

	▼	▼
Total:	Total:	338
		482

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.5851	4 / (1 -p-bar)	4 / (1 - p-bar)
	3	10

Month	p-value	Numerator	Denominator		
1	0.5926	16	27		
2	0.6786	19	28		
3	0.7586	22	29		
4	0.7576	25	33		
5	0.7931	23	29		
6	0.9024	37	41		
7	0.0400	1	25		
8	0.1250	3	24		
9	0.2500	7	28		
10	0.4737	18	38		
11	0.4118	14	34		
12	0.6207	18	29		
13	0.4043	19	47		
14	0.2333	7	30		
15	0.5200	13	25		
16	0.8800	44	50		
17	0.7586	22	29		
18	0.9000	36	40		
19	0.4750	19	40		
20	0.6667	26	39		
21	0.7143	20	28		
22	0.5714	16	28		
23	0.6000	18	30		
24	0.4400	11	25		

Total: Total: 454 776
 ▼ ▼

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.4284	1 / p-bar	4 / p-bar
	3	10

Month	p-value	Numerator	Denominator		
1	0.6471	11	17		
2	0.5417	13	24		
3	0.5652	13	23		
4	0.3750	12	32		
5	0.4615	12	26		
6	0.4333	13	30		
7	0.5000	14	28		
8	0.6667	12	18		
9	0.5789	11	19		
10	0.4643	13	28		
11	0.5455	12	22		
12	0.5714	12	21		
13	0.4762	10	21		
14	0.4444	16	36		
15	0.4286	12	28		
16	0.4375	14	32		
17	0.5000	15	30		
18	0.3636	12	33		
19	0.3939	13	33		
20	0.3043	14	46		
21	0.2615	17	65		
22	0.3846	15	39		
23	0.2889	13	45		
24	0.4054	15	37		

Total: Total: 314
 ▼ ▼
 Total: 733

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

Month	p-value	Numerator	Formula A		Formula B
			p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
			0.9193	4 / (1 -p-bar)	4 / (1 - p-bar)
				13	50
Month	p-value	Numerator	Denominator		
1	0.9600	24	25		Small subgroup. Cannot identify outliers!
2	0.8438	27	32		Small subgroup. Cannot identify outliers!
3	1.0000	26	26		Small subgroup. Cannot identify outliers!
4	0.9412	32	34		Small subgroup. Cannot identify outliers!
5	0.9333	28	30		Small subgroup. Cannot identify outliers!
6	0.9024	37	41		Small subgroup. Cannot identify outliers!
7	0.9583	46	48		Small subgroup. Cannot identify outliers!
8	0.9535	41	43		Small subgroup. Cannot identify outliers!
9	0.9362	44	47		Small subgroup. Cannot identify outliers!
10	0.9524	40	42		Small subgroup. Cannot identify outliers!
11	0.9524	40	42		Small subgroup. Cannot identify outliers!
12	0.9688	31	32		Small subgroup. Cannot identify outliers!
13	0.9722	35	36		Small subgroup. Cannot identify outliers!
14	0.9600	24	25		Small subgroup. Cannot identify outliers!
15	0.8750	28	32		Small subgroup. Cannot identify outliers!
16	0.9444	34	36		Small subgroup. Cannot identify outliers!
17	0.9216	47	51		
18	0.5614	32	57		
19	0.9863	72	73		
20	0.9592	47	49		Small subgroup. Cannot identify outliers!
21	0.9074	49	54		
22	0.9512	39	41		Small subgroup. Cannot identify outliers!
23	0.9143	32	35		Small subgroup. Cannot identify outliers!
24	0.9565	22	23		Small subgroup. Cannot identify outliers!
		▼	▼		
Total:	Total:	877	954		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

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Answers for Proportion Measure Exercises

	Formula A	Formula B
p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.0556	1 / p-bar	4 / p-bar
	18	72

Month	p-value	Numerator	Denominator		
1	0.0565	74	1,309		
2	0.0499	68	1,362		
3	0.0572	68	1,189		
4	0.0567	75	1,323		
5	0.0552	66	1,196		
6	0.0591	70	1,185		
7	0.0635	84	1,322		
8	0.0613	80	1,306		
9	0.0607	79	1,301		
10	0.0787	98	1,245		
11	0.0623	81	1,300		
12	0.0572	68	1,189		
13	0.0667	82	1,230		
14	0.0505	69	1,365		
15	0.0409	49	1,197		
16	0.0539	72	1,337		
17	0.0466	54	1,158		
18	0.0597	79	1,324		
19	0.0542	74	1,365		
20	0.0475	58	1,221		
21	0.0458	60	1,310		
22	0.0545	70	1,285		
23	0.0461	56	1,216		
24	0.0483	61	1,264		

Total: Total: 1,695 30,499
 ▼ ▼

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.0070

"Small numbers"? Caution with SPC!
1 / p-bar
143

Subgroup with sufficient power to ID outliers?
4 / p-bar
572

Month	p-value	Numerator	Denominator		
1	0.0120	4	334		Small subgroup. Cannot identify outliers!
2	0.0000	0	329		Small subgroup. Cannot identify outliers!
3	0.0035	1	285		Small subgroup. Cannot identify outliers!
4	0.0095	3	315		Small subgroup. Cannot identify outliers!
5	0.0098	3	305		Small subgroup. Cannot identify outliers!
6	0.0069	2	288		Small subgroup. Cannot identify outliers!
7	0.0178	5	281		Small subgroup. Cannot identify outliers!
8	0.0085	2	236		Small subgroup. Cannot identify outliers!
9	0.0043	1	233		Small subgroup. Cannot identify outliers!
10	0.0038	1	263		Small subgroup. Cannot identify outliers!
11	0.0000	0	277		Small subgroup. Cannot identify outliers!
12	0.0106	3	283		Small subgroup. Cannot identify outliers!
13	0.0078	2	257		Small subgroup. Cannot identify outliers!
14	0.0059	2	337		Small subgroup. Cannot identify outliers!
15	0.0133	4	300		Small subgroup. Cannot identify outliers!
16	0.0102	3	293		Small subgroup. Cannot identify outliers!
17	0.0071	2	283		Small subgroup. Cannot identify outliers!
18	0.0036	1	274		Small subgroup. Cannot identify outliers!
19	0.0072	2	276		Small subgroup. Cannot identify outliers!
20	0.0064	2	314		Small subgroup. Cannot identify outliers!
21	0.0000	0	238		Small subgroup. Cannot identify outliers!
22	0.0082	2	243		Small subgroup. Cannot identify outliers!
23	0.0034	1	298		Small subgroup. Cannot identify outliers!
24	0.0064	2	313		Small subgroup. Cannot identify outliers!

Total:	Total:	48	6,855
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If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

May 19, 2010

16

Answers for Proportion Measure Exercises

Month	p-value	Numerator	Denominator	Formula A	Formula B
				"Small numbers"? Caution with SPC! $4 / (1 - \bar{p})$ 4	Subgroup with sufficient power to ID outliers? $4 / (1 - \bar{p})$ 13
1	0.6667	6	9		Small subgroup. Cannot identify outliers!
2	0.5385	7	13		
3	0.8182	9	11		Small subgroup. Cannot identify outliers!
4	0.8667	13	15		
5	0.7500	6	8		Small subgroup. Cannot identify outliers!
6	0.9000	9	10		Small subgroup. Cannot identify outliers!
7	0.8182	9	11		Small subgroup. Cannot identify outliers!
8	0.6429	9	14		
9	0.6667	8	12		Small subgroup. Cannot identify outliers!
10	0.7500	21	28		
11	0.7143	10	14		
12	0.8333	5	6		Small subgroup. Cannot identify outliers!
13	0.4545	5	11		Small subgroup. Cannot identify outliers!
14	0.7692	10	13		
15	0.7000	7	10		Small subgroup. Cannot identify outliers!
16	0.4667	7	15		
17	0.6000	9	15		
18	0.7143	10	14		
19	0.5000	5	10		Small subgroup. Cannot identify outliers!
20	0.5714	4	7		Small subgroup. Cannot identify outliers!
21	0.7500	9	12		Small subgroup. Cannot identify outliers!
22	0.5882	10	17		
23	0.5333	8	15		
24	0.8000	12	15		
		▼	▼		
Total:	Total:	208	305		

If p-bar is less than 0.5, data are skewed to the right.
If p-bar is greater than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

	Formula A	Formula B
p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.1624	1 / p-bar	4 / p-bar
	7	25

Month	p-value	Numerator	Denominator		
1	0.1628	7	43		
2	0.1795	7	39		
3	0.1034	3	29		
4	0.1111	4	36		
5	0.1860	8	43		
6	0.2105	8	38		
7	0.1143	4	35		
8	0.1290	4	31		
9	0.1333	4	30		
10	0.0800	2	25		
11	0.1905	8	42		
12	0.1875	6	32		
13	0.1951	8	41		
14	0.2609	12	46		
15	0.1489	7	47		
16	0.1429	7	49		
17	0.2667	8	30		
18	0.0968	3	31		
19	0.0769	3	39		
20	0.1471	5	34		
21	0.1765	6	34		
22	0.0500	1	20		
23	0.1200	3	25		
24	0.2973	11	37		

Total:	Total:	139	856
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Small subgroup. Cannot identify outliers!

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.7725

"Small numbers"? Caution with SPC!
4 / (1 -p-bar)
5

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
18

Month	p-value	Numerator	Denominator		
1	0.8000	12	15		Small subgroup. Cannot identify outliers!
2	0.8750	14	16		Small subgroup. Cannot identify outliers!
3	0.7500	6	8		Small subgroup. Cannot identify outliers!
4	0.9091	10	11		Small subgroup. Cannot identify outliers!
5	0.5882	10	17		Small subgroup. Cannot identify outliers!
6	0.8000	8	10		Small subgroup. Cannot identify outliers!
7	0.8571	12	14		Small subgroup. Cannot identify outliers!
8	0.7273	8	11		Small subgroup. Cannot identify outliers!
9	0.8000	4	5		Small subgroup. Cannot identify outliers!
10	0.8571	6	7		Small subgroup. Cannot identify outliers!
11	0.6250	5	8		Small subgroup. Cannot identify outliers!
12	0.6000	3	5		Small subgroup. Cannot identify outliers!
13	1.0000	7	7		Small subgroup. Cannot identify outliers!
14	0.8889	8	9		Small subgroup. Cannot identify outliers!
15	0.9000	9	10		Small subgroup. Cannot identify outliers!
16	0.6875	11	16		Small subgroup. Cannot identify outliers!
17	1.0000	5	5		Small subgroup. Cannot identify outliers!
18	0.6667	6	9		Small subgroup. Cannot identify outliers!
19	1.0000	6	6		Small subgroup. Cannot identify outliers!
20	0.6000	6	10		Small subgroup. Cannot identify outliers!
21	0.5000	4	8		Small subgroup. Cannot identify outliers!
22	1.0000	5	5		Small subgroup. Cannot identify outliers!
23	0.8182	9	11		Small subgroup. Cannot identify outliers!
24	0.6000	6	10		Small subgroup. Cannot identify outliers!
		▼	▼		
Total:	Total:	180	233		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

		p-bar =		Formula A		Formula B	
		0.0775		"Small numbers"? Caution with SPC!		Subgroup with sufficient power to ID outliers?	
				1 / p-bar		4 / p-bar	
				13		52	
Month	p-value	Numerator	Denominator				
1	0.0000	0	29				Small subgroup. Cannot identify outliers!
2	0.0345	1	29				Small subgroup. Cannot identify outliers!
3	0.0000	0	25				Small subgroup. Cannot identify outliers!
4	0.1875	3	16				Small subgroup. Cannot identify outliers!
5	0.1429	2	14				Small subgroup. Cannot identify outliers!
6	0.0000	0	14				Small subgroup. Cannot identify outliers!
7	0.0000	0	4		Small number. Interpret with caution!		Small subgroup. Cannot identify outliers!
8	0.1111	1	9		Small number. Interpret with caution!		Small subgroup. Cannot identify outliers!
9	0.0000	0	17				Small subgroup. Cannot identify outliers!
10	0.0000	0	4		Small number. Interpret with caution!		Small subgroup. Cannot identify outliers!
11	0.0556	1	18				Small subgroup. Cannot identify outliers!
12	0.0000	0	21				Small subgroup. Cannot identify outliers!
13	0.2000	3	15				Small subgroup. Cannot identify outliers!
14	0.1667	4	24				Small subgroup. Cannot identify outliers!
15	0.0000	0	11		Small number. Interpret with caution!		Small subgroup. Cannot identify outliers!
16	0.2273	5	22				Small subgroup. Cannot identify outliers!
17	0.1579	3	19				Small subgroup. Cannot identify outliers!
18	0.0000	0	21				Small subgroup. Cannot identify outliers!
19	0.0667	1	15				Small subgroup. Cannot identify outliers!
20	0.1250	2	16				Small subgroup. Cannot identify outliers!
21	0.0000	0	24				Small subgroup. Cannot identify outliers!
22	0.2000	2	10		Small number. Interpret with caution!		Small subgroup. Cannot identify outliers!
23	0.2000	3	15				Small subgroup. Cannot identify outliers!
24	0.0476	1	21				Small subgroup. Cannot identify outliers!
Total:	Total:	32	413				

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is > than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.6026

"Small numbers"? Caution with SPC!
4 / (1 - p-bar)
3

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
11

Month	p-value	Numerator	Denominator	Formula A	Formula B
1	0.5000	2	4		Small subgroup. Cannot identify outliers!
2	0.0000	0	6		Small subgroup. Cannot identify outliers!
3	0.0000	0	3		Small subgroup. Cannot identify outliers!
4	0.0000	0	3		Small subgroup. Cannot identify outliers!
5	0.5000	4	8		Small subgroup. Cannot identify outliers!
6	0.3000	3	10		Small subgroup. Cannot identify outliers!
7	0.6000	3	5		Small subgroup. Cannot identify outliers!
8	0.5000	4	8		Small subgroup. Cannot identify outliers!
9	0.2500	2	8		Small subgroup. Cannot identify outliers!
10	0.5000	4	8		Small subgroup. Cannot identify outliers!
11	0.0000	0	6		Small subgroup. Cannot identify outliers!
12	0.6667	2	3		Small subgroup. Cannot identify outliers!
13	0.0000	0	2	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
14	0.3333	1	3		Small subgroup. Cannot identify outliers!
15	0.2500	1	4		Small subgroup. Cannot identify outliers!
16	1.0000	8	8		Small subgroup. Cannot identify outliers!
17	0.6667	4	6		Small subgroup. Cannot identify outliers!
18	0.8333	15	18		
19	0.9000	9	10		Small subgroup. Cannot identify outliers!
20	1.0000	6	6		Small subgroup. Cannot identify outliers!
21	1.0000	13	13		
22	1.0000	6	6		Small subgroup. Cannot identify outliers!
23	0.8333	5	6		Small subgroup. Cannot identify outliers!
24	1.0000	2	2	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
Total:	Total:	94	156		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.6090	4 / (1 - p-bar)	4 / (1 - p-bar)
	3	11

Month	p-value	Numerator	Denominator		
1	0.6296	17	27		
2	0.9200	23	25		
3	0.5882	10	17		
4	0.7000	21	30		
5	0.7949	31	39		
6	0.8889	32	36		
7	0.7714	27	35		
8	0.7600	19	25		
9	0.5500	11	20		
10	0.6316	24	38		
11	0.5455	18	33		
12	0.5882	10	17		
13	0.5806	18	31		
14	0.4375	14	32		
15	0.5172	15	29		
16	0.6364	14	22		
17	0.5556	10	18		
18	0.6471	22	34		
19	0.4565	21	46		
20	0.4815	13	27		
21	0.3500	7	20		
22	0.3333	8	24		
23	0.4091	9	22		
24	0.6111	11	18		

Total: Total: 405
 ▼ ▼
 Total: 665

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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22

Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.0945

"Small numbers"? Caution with SPC!
1 / p-bar
11

Subgroup with sufficient power to ID outliers?
4 / p-bar
43

Month	p-value	Numerator	Denominator	Formula A	Formula B
1	0.0345	1	29		Small subgroup. Cannot identify outliers!
2	0.0909	2	22		Small subgroup. Cannot identify outliers!
3	0.0571	2	35		Small subgroup. Cannot identify outliers!
4	0.0000	0	17		Small subgroup. Cannot identify outliers!
5	0.2105	4	19		Small subgroup. Cannot identify outliers!
6	0.2778	5	18		Small subgroup. Cannot identify outliers!
7	0.0769	2	26		Small subgroup. Cannot identify outliers!
8	0.1053	2	19		Small subgroup. Cannot identify outliers!
9	0.1250	3	24		Small subgroup. Cannot identify outliers!
10	0.0571	2	35		Small subgroup. Cannot identify outliers!
11	0.1111	3	27		Small subgroup. Cannot identify outliers!
12	0.0000	0	16		Small subgroup. Cannot identify outliers!
13	0.1250	3	24		Small subgroup. Cannot identify outliers!
14	0.1304	3	23		Small subgroup. Cannot identify outliers!
15	0.0769	2	26		Small subgroup. Cannot identify outliers!
16	0.1333	4	30		Small subgroup. Cannot identify outliers!
17	0.1364	3	22		Small subgroup. Cannot identify outliers!
18	0.1613	5	31		Small subgroup. Cannot identify outliers!
19	0.0769	2	26		Small subgroup. Cannot identify outliers!
20	0.0714	2	28		Small subgroup. Cannot identify outliers!
21	0.0000	0	19		Small subgroup. Cannot identify outliers!
22	0.0769	2	26		Small subgroup. Cannot identify outliers!
23	0.0455	1	22		Small subgroup. Cannot identify outliers!
24	0.1111	2	18		Small subgroup. Cannot identify outliers!
Total:	Total:	55	582		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =
0.5831

"Small numbers"? Caution with SPC!
4 / (1 - p-bar)
3

Subgroup with sufficient power to ID outliers?
4 / (1 - p-bar)
10

Month	p-value	Numerator	Denominator		
1	0.5652	13	23		
2	0.7407	20	27		
3	0.4706	8	17		
4	0.6786	19	28		
5	0.7419	23	31		
6	0.5000	13	26		
7	0.7027	26	37		
8	0.6852	37	54		
9	0.7619	32	42		
10	0.7436	29	39		
11	0.7647	26	34		
12	0.5455	24	44		
13	0.3333	6	18		
14	0.7250	29	40		
15	0.6957	16	23		
16	0.4483	13	29		
17	0.2727	6	22		
18	0.3469	17	49		
19	0.6780	40	59		
20	0.3438	11	32		
21	0.4138	12	29		
22	0.5000	11	22		
23	0.5500	22	40		
24	0.3448	10	29		

▼ ▼
Total: Total: 463 794

If p-bar is less than 0.5, data are skewed to the right.
If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

	Formula A	Formula B
p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.4234	1 / p-bar	4 / p-bar
	3	10

Month	p-value	Numerator	Denominator		
1	0.1111	2	18		
2	0.1176	2	17		
3	0.2941	5	17		
4	0.2667	4	15		
5	0.0000	0	15		
6	0.0667	1	15		
7	0.2000	2	10		
8	0.3529	6	17		
9	0.3750	6	16		
10	0.7857	11	14		
11	0.5625	9	16		
12	0.8462	11	13		
13	0.6842	13	19		
14	0.9091	10	11		
15	0.9091	10	11		
16	0.5455	6	11		
17	0.4545	5	11		
18	0.2500	2	8		Small subgroup. Cannot identify outliers!
19	0.7200	18	25		
20	0.8000	4	5		Small subgroup. Cannot identify outliers!
21	0.6667	2	3		Small subgroup. Cannot identify outliers!
22	0.1250	2	16		
23	0.3077	4	13		
24	0.3529	6	17		

Total: Total: 141
 ▼ ▼
 333

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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25

Answers for Proportion Measure Exercises

Month	p-value	Numerator	Formula A		Formula B	
			p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?	
			0.8180	4 / (1 - p-bar)	4 / (1 - p-bar)	
				6	22	
			Denominator			
1	0.7895	15	19			Small subgroup. Cannot identify outliers!
2	0.8696	20	23			
3	0.9091	20	22			
4	0.9167	22	24			
5	0.8148	22	27			
6	0.8182	18	22			
7	0.5294	18	34			
8	0.8421	16	19			Small subgroup. Cannot identify outliers!
9	1.0000	15	15			Small subgroup. Cannot identify outliers!
10	0.9167	11	12			Small subgroup. Cannot identify outliers!
11	1.0000	17	17			Small subgroup. Cannot identify outliers!
12	0.9231	12	13			Small subgroup. Cannot identify outliers!
13	0.9524	20	21			Small subgroup. Cannot identify outliers!
14	0.8696	20	23			
15	0.8947	17	19			Small subgroup. Cannot identify outliers!
16	0.9259	25	27			
17	0.8750	7	8			Small subgroup. Cannot identify outliers!
18	0.9000	18	20			Small subgroup. Cannot identify outliers!
19	0.8750	14	16			Small subgroup. Cannot identify outliers!
20	0.9630	26	27			
21	1.0000	19	19			Small subgroup. Cannot identify outliers!
22	0.5152	17	33			
23	0.4091	9	22			
24	0.6111	11	18			Small subgroup. Cannot identify outliers!
		▼	▼			
Total:	Total:	409	500			

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

Formula A

Formula B

p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.0359	1 / p-bar	4 / p-bar
	28	112

Month	p-value	Numerator	Denominator		
1	0.0495	11	222		
2	0.0317	7	221		
3	0.0311	6	193		
4	0.0284	6	211		
5	0.0402	8	199		
6	0.0518	10	193		
7	0.0294	6	204		
8	0.0390	6	154		
9	0.0705	11	156		
10	0.0530	8	151		
11	0.0376	7	186		
12	0.0157	3	191		
13	0.0109	2	184		
14	0.0337	7	208		
15	0.0529	10	189		
16	0.0259	5	193		
17	0.0553	11	199		
18	0.0503	10	199		
19	0.0256	5	195		
20	0.0332	7	211		
21	0.0390	6	154		
22	0.0204	3	147		
23	0.0238	5	210		
24	0.0227	5	220		

Total: Total: 165
 ▼ ▼
 Total: 4,590

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

		p-bar =		Formula A	Formula B
		0.8444		"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
				$4 / (1 - \text{p-bar})$	$4 / (1 - \text{p-bar})$
				7	26
Month	p-value	Numerator	Denominator		
1	0.8000	12	15		Small subgroup. Cannot identify outliers!
2	0.9375	15	16		Small subgroup. Cannot identify outliers!
3	1.0000	8	8		Small subgroup. Cannot identify outliers!
4	0.8462	11	13		Small subgroup. Cannot identify outliers!
5	0.7368	14	19		Small subgroup. Cannot identify outliers!
6	0.8462	11	13		Small subgroup. Cannot identify outliers!
7	0.8889	16	18		Small subgroup. Cannot identify outliers!
8	0.8462	11	13		Small subgroup. Cannot identify outliers!
9	0.7500	6	8		Small subgroup. Cannot identify outliers!
10	0.8333	5	6	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
11	1.0000	9	9		Small subgroup. Cannot identify outliers!
12	0.8333	5	6	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
13	1.0000	8	8		Small subgroup. Cannot identify outliers!
14	0.8000	8	10		Small subgroup. Cannot identify outliers!
15	0.9091	10	11		Small subgroup. Cannot identify outliers!
16	0.9000	18	20		Small subgroup. Cannot identify outliers!
17	1.0000	6	6	Small number. Interpret with caution!	Small subgroup. Cannot identify outliers!
18	0.7778	7	9		Small subgroup. Cannot identify outliers!
19	0.9000	9	10		Small subgroup. Cannot identify outliers!
20	0.8333	10	12		Small subgroup. Cannot identify outliers!
21	0.7500	6	8		Small subgroup. Cannot identify outliers!
22	0.7143	5	7		Small subgroup. Cannot identify outliers!
23	0.6667	10	15		Small subgroup. Cannot identify outliers!
24	0.8000	8	10		Small subgroup. Cannot identify outliers!
Total:	Total:	228	270		

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

	Formula A	Formula B
p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.1462	1 / p-bar	4 / p-bar
	7	28

Month	p-value	Numerator	Denominator		
1	0.1329	19	143		
2	0.1488	18	121		
3	0.1210	15	124		
4	0.1190	15	126		
5	0.2203	26	118		
6	0.1440	18	125		
7	0.2000	24	120		
8	0.2000	26	130		
9	0.1880	25	133		
10	0.1367	19	139		
11	0.1324	18	136		
12	0.1261	14	111		
13	0.1190	15	126		
14	0.1288	17	132		
15	0.1570	19	121		
16	0.1417	18	127		
17	0.2339	29	124		
18	0.1875	24	128		
19	0.1866	25	134		
20	0.1387	19	137		
21	0.0822	12	146		
22	0.1157	14	121		
23	0.0659	11	167		
24	0.1259	18	143		

Total: Total: 458
 ▼ ▼
 3,132

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is greater than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

	Formula A	Formula B
p-bar =	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?
0.0003	1 / p-bar	4 / p-bar
	3,115	12,457

Month	p-value	Numerator	Denominator		
1	0.0003	6	22,514		
2	0.0003	7	21,332		
3	0.0005	13	24,695		
4	0.0005	12	23,841		
5	0.0003	8	24,765		
6	0.0004	9	23,026		
7	0.0004	10	24,204		
8	0.0004	9	23,452		
9	0.0003	7	26,878		
10	0.0004	9	23,980		
11	0.0003	6	22,378		
12	0.0002	5	20,348		
13	0.0003	7	22,671		
14	0.0002	5	21,658		
15	0.0003	6	23,557		
16	0.0003	7	22,309		
17	0.0003	7	23,168		
18	0.0004	8	22,382		
19	0.0003	8	24,749		
20	0.0002	5	23,339		
21	0.0002	6	24,748		
22	0.0004	9	24,262		
23	0.0002	5	20,577		
24	0.0002	4	19,491		

		▼	▼
Total:	Total:	178	554,324

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.

Rational Data Analysis--Getting the Best Return

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Answers for Proportion Measure Exercises

Month	p-value	Numerator	Formula A		Formula B	
			Denominator	"Small numbers"? Caution with SPC!	Subgroup with sufficient power to ID outliers?	
			p-bar =	4 / (1 -p-bar)	4 / (1 - p-bar)	
			0.9800	50	200	
1	0.9861	71	72			Small subgroup. Cannot identify outliers!
2	0.9733	73	75			Small subgroup. Cannot identify outliers!
3	0.9853	67	68			Small subgroup. Cannot identify outliers!
4	0.9718	69	71			Small subgroup. Cannot identify outliers!
5	0.8378	62	74			Small subgroup. Cannot identify outliers!
6	0.9836	60	61			Small subgroup. Cannot identify outliers!
7	0.9697	64	66			Small subgroup. Cannot identify outliers!
8	0.9718	69	71			Small subgroup. Cannot identify outliers!
9	0.9848	65	66			Small subgroup. Cannot identify outliers!
10	1.0000	65	65			Small subgroup. Cannot identify outliers!
11	1.0000	69	69			Small subgroup. Cannot identify outliers!
12	0.9846	64	65			Small subgroup. Cannot identify outliers!
13	0.9853	67	68			Small subgroup. Cannot identify outliers!
14	0.9853	67	68			Small subgroup. Cannot identify outliers!
15	1.0000	70	70			Small subgroup. Cannot identify outliers!
16	0.9744	76	78			Small subgroup. Cannot identify outliers!
17	0.9848	65	66			Small subgroup. Cannot identify outliers!
18	0.9851	66	67			Small subgroup. Cannot identify outliers!
19	1.0000	69	69			Small subgroup. Cannot identify outliers!
20	1.0000	70	70			Small subgroup. Cannot identify outliers!
21	0.9848	65	66			Small subgroup. Cannot identify outliers!
22	1.0000	65	65			Small subgroup. Cannot identify outliers!
23	1.0000	70	70			Small subgroup. Cannot identify outliers!
24	0.9853	67	68			Small subgroup. Cannot identify outliers!
			▼	▼		
Total:	Total:	1,615	1,648			

If p-bar is less than 0.5, data are skewed to the right.
 If p-bar is than 0.5, data are skewed to the left.