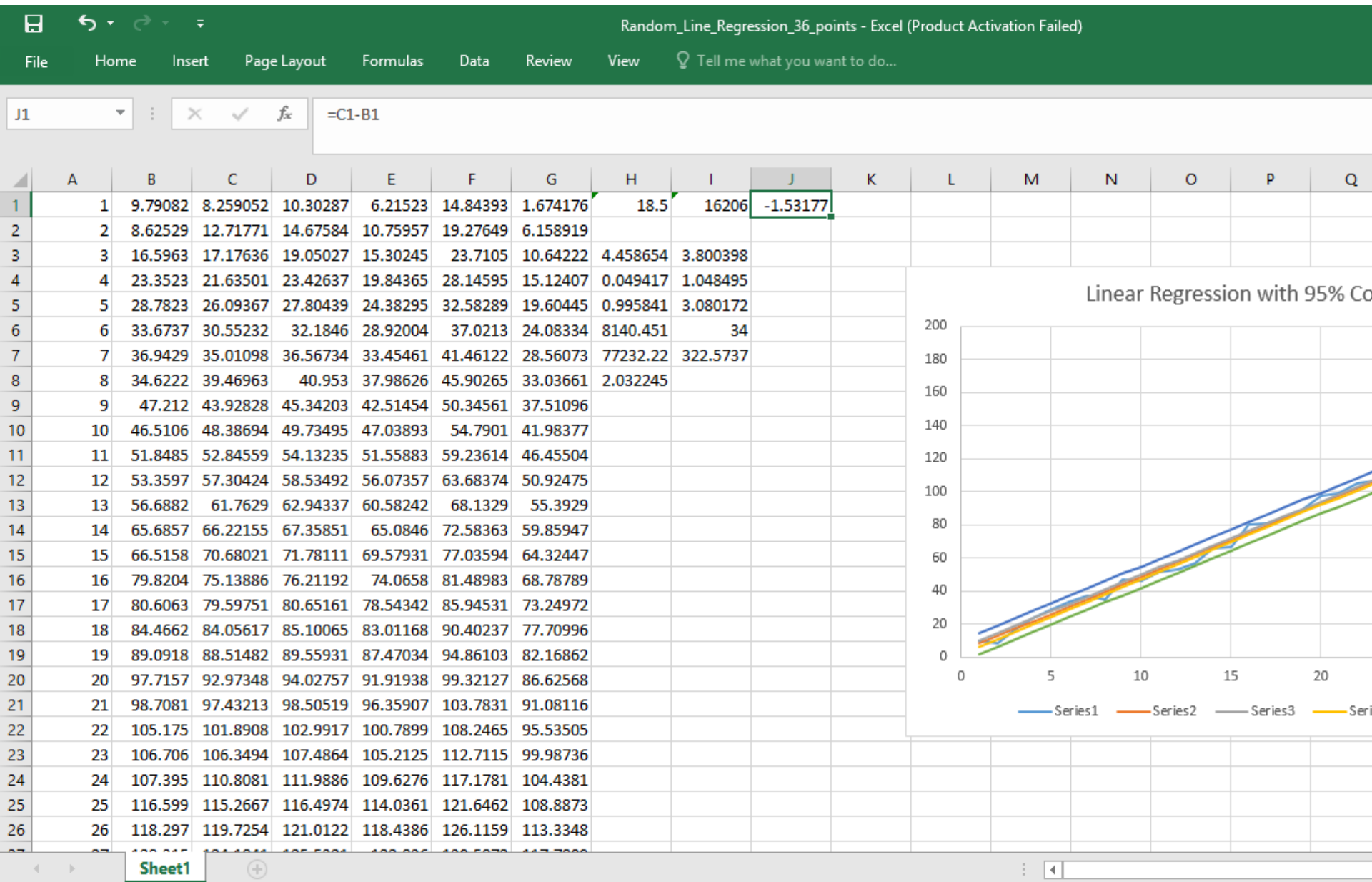


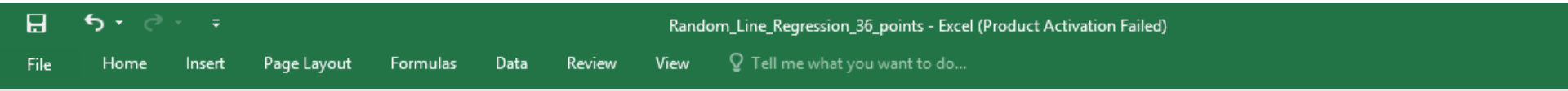
Q-test on residuals

Dixon's Q-test for a line requires testing the residuals for outliers

Use the LS Worksheet and calculate residues in column J (J1 = C1-B1)

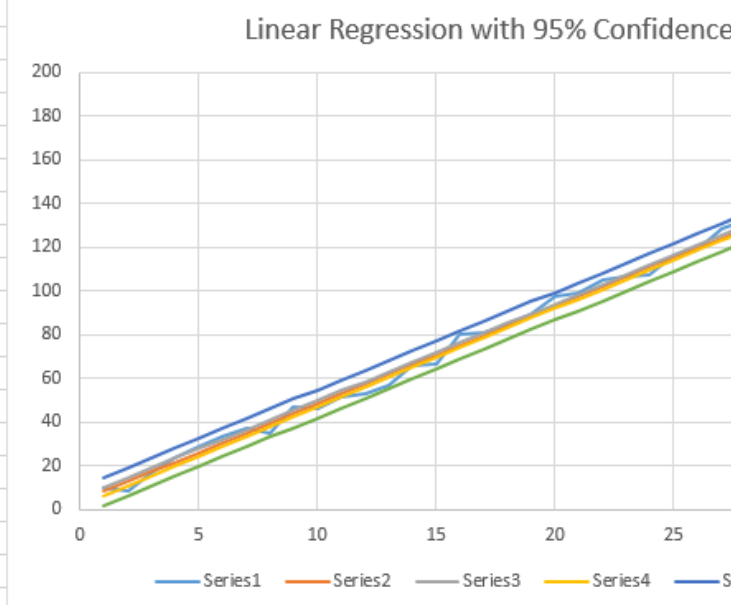


Click on the lower right corner of cell J1 to fill column J with the residuals



J1 fx =C1-B1

	A	B	C	D	E	F	G	H	I	J
1	1	9.79082	8.259052	10.30287	6.21523	14.84393	1.674176	18.5	16206	-1.53177
2	2	8.62529	12.71771	14.67584	10.75957	19.27649	6.158919			4.092416
3	3	16.5963	17.17636	19.05027	15.30245	23.7105	10.64222	4.458654	3.800398	0.58006
4	4	23.3523	21.63501	23.42637	19.84365	28.14595	15.12407	0.049417	1.048495	-1.71729
5	5	28.7823	26.09367	27.80439	24.38295	32.58289	19.60445	0.995841	3.080172	-2.68863
6	6	33.6737	30.55232	32.1846	28.92004	37.0213	24.08334	8140.451	34	-3.12138
7	7	36.9429	35.01098	36.56734	33.45461	41.46122	28.56073	77232.22	322.5737	-1.93192
8	8	34.6222	39.46963	40.953	37.98626	45.90265	33.03661	2.032245		4.847429
9	9	47.212	43.92828	45.34203	42.51454	50.34561	37.51096			-3.28372
10	10	46.5106	48.38694	49.73495	47.03893	54.7901	41.98377			1.876337
11	11	51.8485	52.84559	54.13235	51.55883	59.23614	46.45504			0.997091
12	12	53.3597	57.30424	58.53492	56.07357	63.68374	50.92475			3.944545
13	13	56.6882	61.7629	62.94337	60.58242	68.1329	55.3929			5.074698
14	14	65.6857	66.22155	67.35851	65.0846	72.58363	59.85947			0.535852
15	15	66.5158	70.68021	71.78111	69.57931	77.03594	64.32447			4.164406
16	16	79.8204	75.13886	76.21192	74.0658	81.48983	68.78789			-4.68154
17	17	80.6063	79.59751	80.65161	78.54342	85.94531	73.24972			-1.00879
18	18	84.4662	84.05617	85.10065	83.01168	90.40237	77.70996			-0.41003
19	19	89.0918	88.51482	89.55931	87.47034	94.86103	82.16862			-0.57698
20	20	97.7157	92.97348	94.02757	91.91938	99.32127	86.62568			-4.74222
21	21	98.7081	97.43213	98.50519	96.35907	103.7831	91.08116			-1.27597
22	22	105.175	101.8908	102.9917	100.7899	108.2465	95.53505			-3.28422
23	23	106.706	106.3494	107.4864	105.2125	112.7115	99.98736			-0.35656
24	24	107.395	110.8081	111.9886	109.6276	117.1781	104.4381			3.413091
25	25	116.599	115.2667	116.4974	114.0361	121.6462	108.8873			-1.33226
26	26	118.297	119.7254	121.0122	118.4386	126.1159	113.3348			1.428399



Delete the first row of Dixon Q-test worksheet for ease of copying

DixonQ - Excel (Product Activation Failed)

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

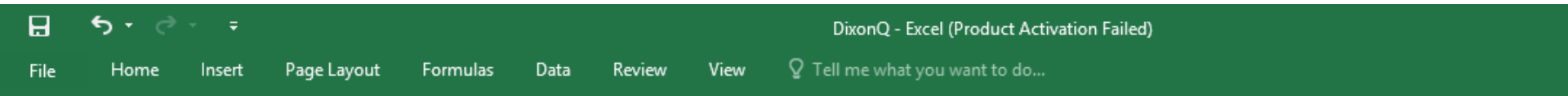
A1 : -1.53176813813819

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	-1.53177			1.531768	5.62418388	8.358416	0.672877	95%	0.466	Y					
2	4.092416											Sample Size	95% Conf.		
3	0.58006											3	0.97		
4	-1.71729											4	0.829		
5	-2.68863											5	0.71		
6	-3.12138											6	0.625		
7	-1.93192											7	0.568		
8	4.847429											8	0.526		
9	-3.28372											9	0.493		
10	1.876337											10	0.466		
11	0.997091														
12	3.944545														
13	5.074698														
14	0.535852														
15	4.164406														
16	-4.68154														
17	-1.00879														
18	-0.41003														
19	-0.57698														
20	-4.74222														
21	-1.27597														
22	-3.28422														
23	-0.35656														
24	3.413091														
25	-1.33226														
26	1.428399														

Sheet1

Average: 0.140470501 Count: 37 Sum: 5.19740854

Copy the negative of column A and paste it as values in column C



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	5.074698	-5.0747	-5.0747	5.074698	0.22726939	9.816923	0.023151	95%	0.466	N				
2	4.847429	-4.84743	-4.84743									Sample Size	95% Conf.	
3	4.219014	-4.21901	-4.21901										3	0.97
4	4.164406	-4.16441	-4.16441										4	0.829
5	4.092416	-4.09242	-4.09242										5	0.71
6	3.944545	-3.94454	-3.94454										6	0.625
7	3.413091	-3.41309	-3.41309										7	0.568
8	3.15236	-3.15236	-3.15236										8	0.526
9	3.095976	-3.09598	-3.09598										9	0.493
10	2.742284	-2.74228	-2.74228										10	0.466
11	1.876337	-1.87634	-1.87634											
12	1.614322	-1.61432	-1.61432											
13	1.428399	-1.4284	-1.4284											
14	1.38663	-1.38663	-1.38663											
15	0.997091	-0.99709	-0.99709											
16	0.58006	-0.58006	-0.58006											
17	0.535852	-0.53585	-0.53585											
18	-0.35656	0.356563	0.356563											
19	-0.41003	0.410032	0.410032											
20	-0.57698	0.576978	0.576978											
21	-1.00879	1.008786	1.008786											
22	-1.27597	1.275971	1.275971											
23	-1.33226	1.332255	1.332255											
24	-1.53177	1.531768	1.531768											
25	-1.71729	1.717287	1.717287											
26	-1.93192	1.931925	1.931925											

Order column C from Largest to Smallest (exactly as was done on A)

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	5.074698	-5.0747	-5.0747	5.074698	0.22726939	9.816923	0.023151	95%	0.466	N																
2	4.847429	-4.84743	-4.84743																							
3	4.219014	-4.21901	-4.21901																							
4	4.164406	-4.16441	-4.16441																							
5	4.092416	-4.09242	-4.09242																							
6	3.944545	-3.94454	-3.94454																							
7	3.413091	-3.41309	-3.41309																							
8	3.15236	-3.15236	-3.15236																							
9	3.095976	-3.09598	-3.09598																							
10	2.742284	-2.74228	-2.74228																							
11	1.876337	-1.87634	-1.87634																							
12	1.614322	-1.61432	-1.61432																							
13	1.428399	-1.4284	-1.4284																							
14	1.38663	-1.38663	-1.38663																							
15	0.997091	-0.99709	-0.99709																							
16	0.58006	-0.58006	-0.58006																							
17	0.535852	-0.53585	-0.53585																							
18	-0.35656	0.356563	0.356563																							
19	-0.41003	0.410032	0.410032																							
20	-0.57698	0.576978	0.576978																							
21	-1.00879	1.008786	1.008786																							
22	-1.27597	1.275971	1.275971																							
23	-1.33226	1.332255	1.332255																							
24	-1.53177	1.531768	1.531768																							
25	-1.71729	1.717287	1.717287																							
26	-1.93192	1.931925	1.931925																							

The 'Sort & Filter' menu is open, showing the following options:

- Sort & Filter
- Find & Select
- Sort Smallest to Largest
- Sort Largest to Smallest
- Custom Sort...
- Filter
- Clear
- Reapply

Do not “Expand the selection”. Use only column C.

DixonQ - Excel (Product Activation Failed)

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

C1 -5.07469839468036

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	5.074698	-5.0747	-5.0747	5.074698	0.22726939	9.816923	0.023151	95%	0.466	N					
2	4.847429	-4.84743	-4.84743									Sample Size	95% Conf.		
3	4.219014	-4.21901	-4.21901									3	0.97		
4	4.164406	-4.16441	-4.16441									4	0.829		
5	4.092416	-4.09242	-4.09242									5	0.71		
6	3.944545	-3.94454	-3.94454									6	0.625		
7	3.413091	-3.41309	-3.41309									7	0.568		
8	3.15236	-3.15236	-3.15236									8	0.526		
9	3.095976	-3.09598	-3.09598									9	0.493		
10	2.742284	-2.74228	-2.74228									10	0.466		
11	1.876337	-1.87634	-1.87634												
12	1.614322	-1.61432	-1.61432												
13	1.428399	-1.4284	-1.4284												
14	1.38663	-1.38663	-1.38663												
15	0.997091	-0.99709	-0.99709												
16	0.58006	-0.58006	-0.58006												
17	0.535852	-0.53585	-0.53585												
18	-0.35656	0.356563	0.356563												
19	-0.41003	0.410032	0.410032												
20	-0.57698	0.576978	0.576978												
21	-1.00879	1.008786	1.008786												
22	-1.27597	1.275971	1.275971												
23	-1.33226	1.332255	1.332255												
24	-1.53177	1.531768	1.531768												
25	-1.71729	1.717287	1.717287												
26	-1.93192	1.931925	1.931925												

Sort Warning

Microsoft Excel found data next to your selection. Since you have not selected this data, it will not be sorted.

What do you want to do?

Expand the selection

Continue with the current selection

Sort Cancel

Sheet1

Ready Average: 0.140470501 Count: 37 Sum: 5.19740854

The Dixon's Q-test on residuals will have a second row for the other end of the line. Commands D1 and E1 are the same except C replaces A in the formulae. F2 = F1 so you do not need to make any change.

DixonQ_Residuals - Excel (Product Activation Failed)

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

E2 =ABS(\$C\$1-\$C\$2)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	5.074698	-5.0747	5.197409	5.074698	0.22726939	9.816923	0.023151	95%	0.466	N						
2	4.847429	-4.84743	4.742224	5.197409	0.45518408	9.816923	0.046367	95%	0.466	N		Sample Size	95% Conf.			
3	4.219014	-4.21901	4.68154										3	0.97		
4	4.164406	-4.16441	4.136062										4	0.829		
5	4.092416	-4.09242	4.130947										5	0.71		
6	3.944545	-3.94454	3.697332										6	0.625		
7	3.413091	-3.41309	3.284217										7	0.568		
8	3.15236	-3.15236	3.283717										8	0.526		
9	3.095976	-3.09598	3.257293										9	0.493		
10	2.742284	-2.74228	3.121379										10	0.466		
11	1.876337	-1.87634	2.688633													
12	1.614322	-1.61432	1.931925													
13	1.428399	-1.4284	1.717287													
14	1.38663	-1.38663	1.531768													
15	0.997091	-0.99709	1.332255													
16	0.58006	-0.58006	1.275971													
17	0.535852	-0.53585	1.008786													
18	-0.35656	0.356563	0.576978													
19	-0.41003	0.410032	0.410032													
20	-0.57698	0.576978	0.356563													
21	-1.00879	1.008786	-0.53585													
22	-1.27597	1.275971	-0.58006													
23	-1.33226	1.332255	-0.99709													
24	-1.53177	1.531768	-1.38663													
25	-1.71729	1.717287	-1.4284													
26	-1.93192	1.931925	-1.61432													

Sheet1

Ready