DATA CLEANING IN EXCEL FOR ASSIGNMENT #1

Excel functions and operations we use are:
• DATEVALUE • SORT left to right • Insert Row • Delete Column • Paste / Transpose

The data

The Excel Workbook file, `Sales_GMR_Trend91q1-16q4.xls`, includes four worksheets:

- **Explan**: Explanatory Notes and Table of Contents
- **AD**: All Dwellings (we're not interested in this sheet)
- **NS**: Non-Strata (almost always Houses)
- **S**: Strata-title properties (almost always Apartments)

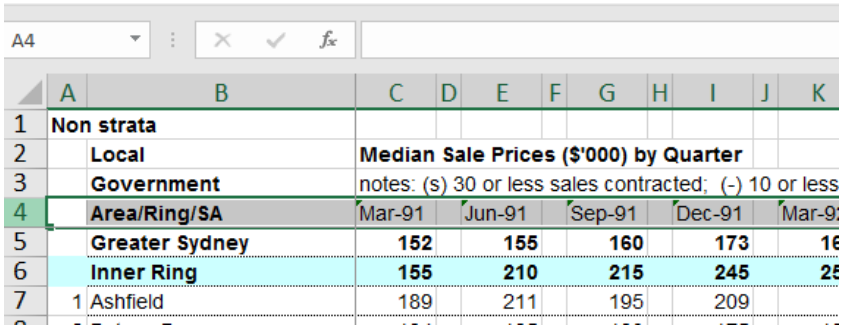
Things to consider:

1. Dates are text, not numeric dates that Excel prefers. (*Note the apostrophe before the text in each date cell.*) We need to change these to proper dates format. (*Excel dates are numbers starting with 1 for Sunday 1, January 1900. Saturday, 18 August 2018 is number 43330*)
2. Each data column has an adjoining column for notes. We need to remove those redundant columns.
3. Some observations are missing, usually because not enough properties were sold to make a reliable median calculation. We need to be careful that these are not incorrectly interpreted as zeros. (*Missing data is not the same as zero!*)
4. Data are in dollar values of the day. They have not been adjusted for inflation. We may want to adjust for inflation.
5. There are 51 different LGAs in the data, plus several aggregate region measures. Do we need to consider them all? Probably not.
6. Quarterly data are recorded from March 1991 to December 2016. Do we need to go that far back? Probably not.

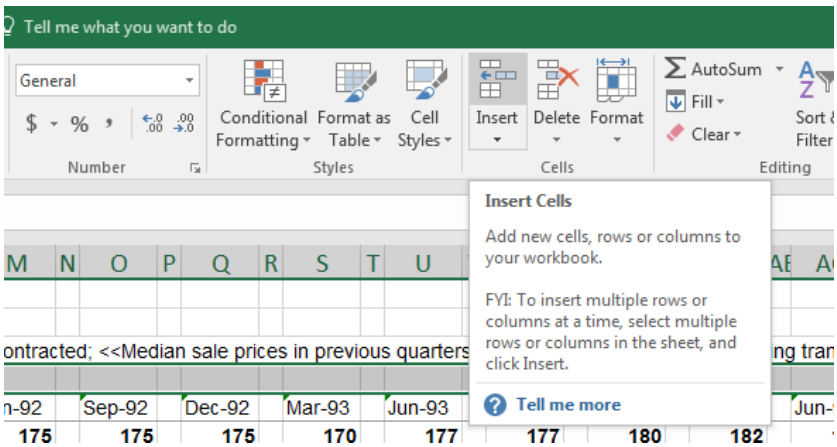
Transform text date to numeric date

Make a copy of the NS worksheet. Work with the copy.

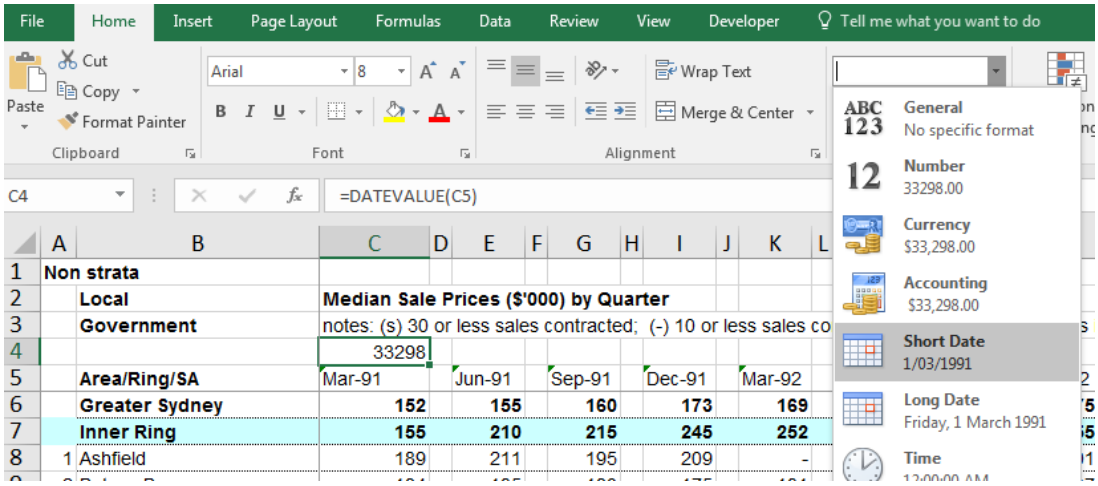
1. Insert a new row above the dates.
   1) Highlight the whole of *Row#4*. The one with dates.
   (*Click on the "4" indicating the 4th row to highlight the entire row.*)



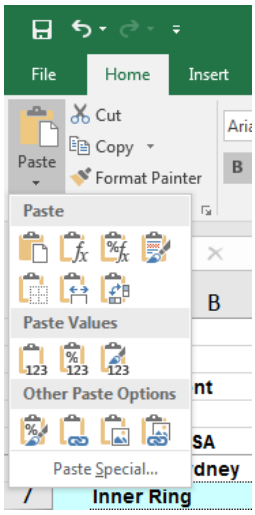
   2) Either Right-Mouse-click and select *Insert*, or hit the *Insert* button in the *Ribbon*.



   3) Select the empty cell above the first date, *Cell D4*.
   Insert the formula: `=DATEVALUE(D5)`
      - You should have a number (33298)
   4) Change the Cell formatting to Date
      - Short Date is quick and easy, but you might want to make a custom format to show only Month and Year.



5) Copy the DATEVALUE formula from *Cell D4* across to all cells in the row to *Cell HC4*, for December 2016.
   - Check that the dates match up.
     i) If not, then you have pasted into the wrong cells. Undo and try again.
6) Replace the formulae in Row 4 with Dates.
   - Copy the whole of *Row#4*.
   - In the *Ribbon*, select *Paste* / *Paste Values…*



   - Check that the dates still match up.
     i) If not, then you have pasted into the wrong cell. Undo and try again.
   - Check that the formula has been replaced with a date.
     i) Double-check that the formulae worked in all cases.
        (1) In my spreadsheet, the last three quarters of 2016 were in proper date format, which produced a `#VALUE!` error because the `DATEVALUE` formula was expecting text.
        (2) In *GX4*, replace the `DATEVALUE` formula with simply `=GX5`

15	#	Dec-15	#	Mar-16	#	#VALUE!	#	#VALUE!	#	#VALUE!	#
5		Dec-15		Mar-16		Jun-16		Sep-16		Dec-16	
90		915		850		885		883		955	
30		1,680		1,800		1,755		1,825		1,925	
90		1,580		1,570		1,453		1,640		1,600	
00		1,218		1,255		1,450		1,448		1,450	
25		1,825		2,030		2,000		2,050		2,350	
25		1,450		1,420		1,500		1,575		1,749	
65		1,220		1,250		1,280		1,319		1,430	
50		3,060		3,220		3,225		3,825		3,832	

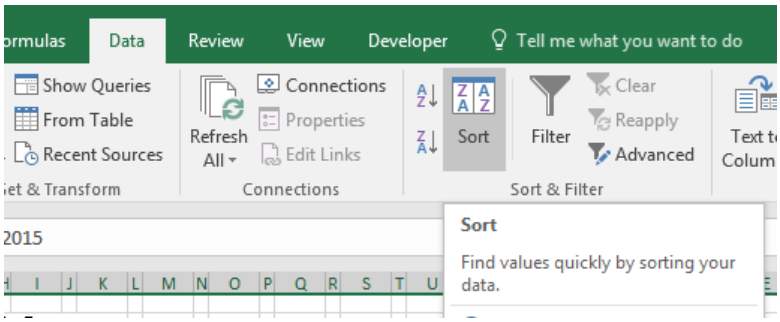
7) Highlight and delete the whole of the redundant dates row, *Row#5*.

SAVE YOUR WORK.

Remove redundant additional columns

1) Highlight the data array that covers all dates and the values for all regions as well as summary values, but not the headings in *Columns A, B, C.* from *Cell D4* to *Cell HC63*

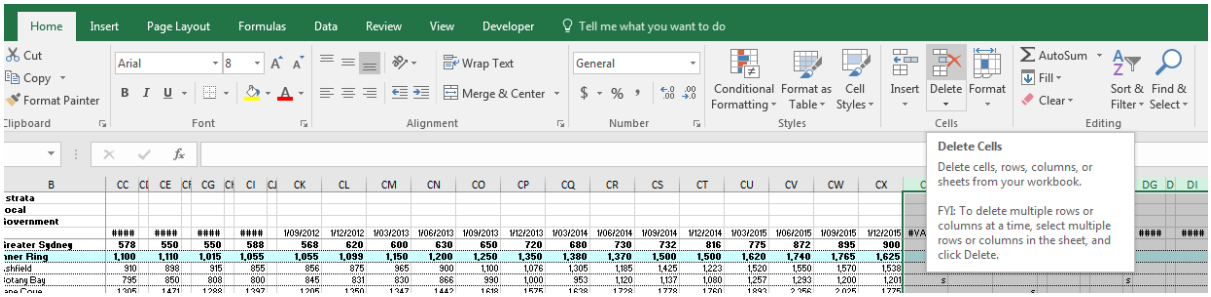
2) In the *Ribbon*, hit the *Data* tab
   a) Select *Sort*



3) Hit the ***Options*** button,
   a) select *Sort left to right*,
   b) then *OK*.
4) In *Sort by*, select *Row 4* (the dates row)
   a) Then *OK*.
   b) Data should all be resorted with dates, in order, on the left and redundant notes columns on the right.
      i) (*You may see columns of hash's. That just means your columns are too narrow to show the numbers inside. Highlight the columns and widen them a little.*)
      ii) Check that the dates are properly sorted to the left, and redundant columns are to the right, with `#VALUE!` errors all together, probably starting at *Column DA*.

Median Sale Prices ($'000) by Quarter												
notes: (s) 30 or less sales contracted; (-) 10 or less sales co												
Mar-91	#	Sep-91	#	Mar-92	#	Sep-92	#	Mar-93	#	Sep-		
151	#	160	#	170	#	175	#	171	#	1		
155	#	215	#	252	#	255	#	235	#	2		
189	#	195	#	-	-	180	#	221	#	2		
194	#	190	#	181	#	183	#	184	#	2		
-	-	291	#	360	#	316	#	328	#	3		
-	#	198	#	200	#	205	#	207	#	2		
110	#	147	-	130	-	174	#	161	#	1		
-	#	455	#	465	#	450	#	538	#	5		

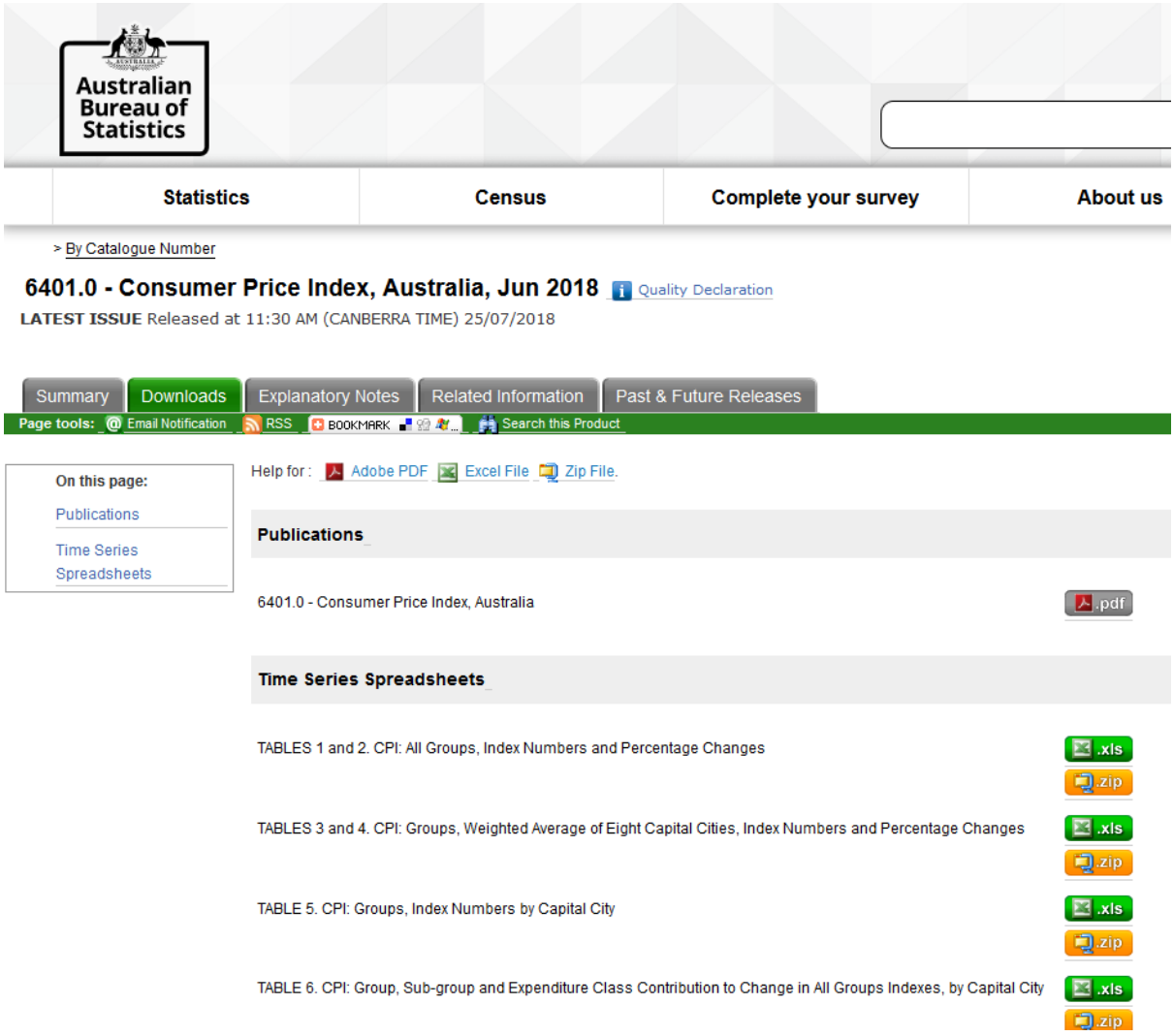
5) Hit the *Home* tab in the *Ribbon*.
6) Highlight the whole columns relating to the redundant columns, probably from *Column DD* to *Column HC*.
7) Hit the *Delete* button in the *Ribbon*.



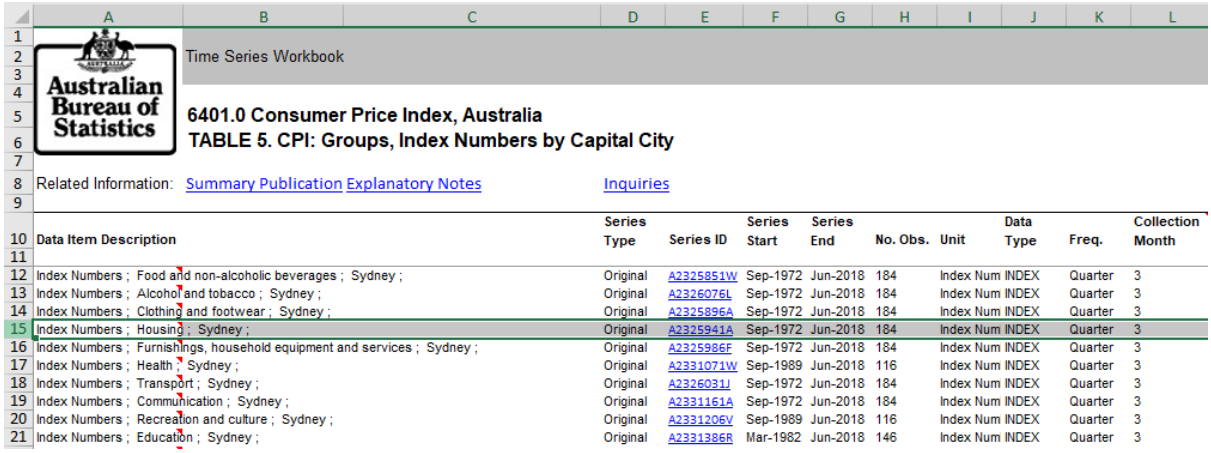
SAVE YOUR WORK.

Adjusting for Inflation

1) Access the latest issue of the Consumer Price Index spreadsheet from the Australian Bureau of Statistics (report 6401)
http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6401.0Main+Features1Jun%202018



2) Download and open the Excel file for *Table 5* (or *Table 9*)
3) Choose an appropriate inflation index. I chose *Housing: Sydney*



Time Series Workbook

6401.0 Consumer Price Index, Australia
TABLE 5. CPI: Groups, Index Numbers by Capital City

Related Information: Summary Publication Explanatory Notes Inquiries

Data Item Description	Series Type	Series ID	Series Start	Series End	No. Obs.	Unit	Data Type	Freq.	Collection Month
Index Numbers ; Food and non-alcoholic beverages ; Sydney ;	Original	A2325851W	Sep-1972	Jun-2018	184	Index Num	INDEX	Quarter	3
Index Numbers ; Alcohol and tobacco ; Sydney ;	Original	A2326076L	Sep-1972	Jun-2018	184	Index Num	INDEX	Quarter	3
Index Numbers ; Clothing and footwear ; Sydney ;	Original	A2325896A	Sep-1972	Jun-2018	184	Index Num	INDEX	Quarter	3
Index Numbers ; Housing ; Sydney ;	Original	A2325941A	Sep-1972	Jun-2018	184	Index Num	INDEX	Quarter	3
Index Numbers ; Furnishings, household equipment and services ; Sydney ;	Original	A2325986F	Sep-1972	Jun-2018	184	Index Num	INDEX	Quarter	3
Index Numbers ; Health ; Sydney ;	Original	A2331071W	Sep-1989	Jun-2018	116	Index Num	INDEX	Quarter	3
Index Numbers ; Transport ; Sydney ;	Original	A2326031J	Sep-1972	Jun-2018	184	Index Num	INDEX	Quarter	3
Index Numbers ; Communication ; Sydney ;	Original	A2331161A	Sep-1972	Jun-2018	184	Index Num	INDEX	Quarter	3
Index Numbers ; Recreation and culture ; Sydney ;	Original	A2331206V	Sep-1989	Jun-2018	116	Index Num	INDEX	Quarter	3
Index Numbers ; Education ; Sydney ;	Original	A2331386R	Mar-1982	Jun-2018	146	Index Num	INDEX	Quarter	3

4) Hit the hyperlink to take you to the series heading in the *Data1* worksheet.
   a) Note that this series starts at September 1972, and our Median Housing Prices data starts at March 1991, so there are some redundant rows.

	A	B	C	D	E	F	G
1		Index Numbers ; Food and non-alcoholic beverages ; Sydney ;	Index Numbers ; Alcohol and tobacco ; Sydney ;	Index Numbers ; Clothing and footwear ; Sydney ;	Index Numbers ; Housing ; Sydney ;	Index Numbers ; Furnishings, household equipment and services ; Sydney ;	Index Numbers ; Health ; Sydney ;
2	**Unit**	Index Numbers	Index Numbers	Index Numbers	Index Numbers	Index Numbers	Index Numbers
3	**Series Type**	Original	Original	Original	Original	Original	Original
4	**Data Type**	INDEX	INDEX	INDEX	INDEX	INDEX	INDEX
5	**Frequency**	Quarter	Quarter	Quarter	Quarter	Quarter	Quarter
6	**Collection Month**	3	3	3	3	3	3
7	**Series Start**	Sep-1972	Sep-1972	Sep-1972	Sep-1972	Sep-1972	Sep-1989
8	**Series End**	Jun-2016	Jun-2016	Jun-2016	Jun-2016	Jun-2016	Jun-2016
9	**No. Obs**	176	176	176	176	176	108
10	**Series ID**	A2325851W	A2326076L	A2325896A	A2325941A	A2325986F	A2331071W
107	Sep-1948						
108	Dec-1948						
109	Mar-1949						
110	Jun-1949						
111	Sep-1949						
112	Dec-1949						
113	Mar-1950						

5) Copy columns A through to E to a new worksheet
6) In the new worksheet,
   a) delete the *Columns B, C, D*.
   b) Delete rows from *Row 2* down to *Row 180* (December 1990), so now we have data that starts at March 1991.
   c) Relabel the Heading to something shorter and more meaningful.
   d) This should leave you with two columns, *Date* and *CPI*, that correspond with the Prices data.

	A	B	C
1	**Quarter**	**Housing CPI**	
2	Mar-1991	57.1	
3	Jun-1991	57.2	
4	Sep-1991	56.1	
5	Dec-1991	55.9	
6	Mar-1992	54.8	
7	Jun-1992	54.0	

7) Return to your *Median Prices* data worksheet.

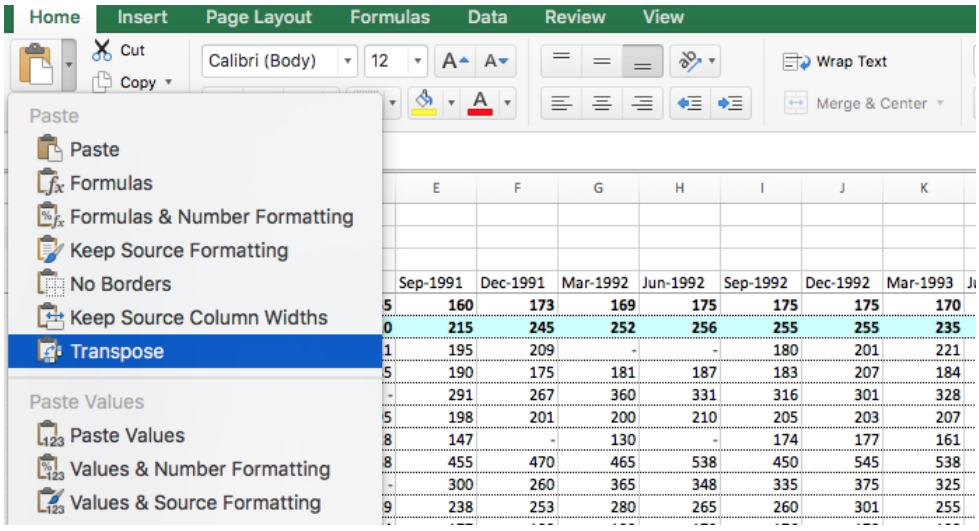
	A	B	C	D	E	F	G	H	I	J
1	Non strata									
2		Area/Ring/SA	Mar-1991	Jun-1991	Sep-1991	Dec-1991	Mar-1992	Jun-1992	Sep-1992	Dec-1992
3		Greater Sydney	152	155	160	173	169	175	175	175
4		Inner Ring	155	210	215	245	252	256	255	255
5	1	Ashfield	189	211	195	209	-	-	180	201
6	2	Botany Bay	194	185	190	175	181	187	183	207
7	3	Lane Cove	-	-	291	267	360	331	316	301
8	4	Leichhardt	-	195	198	201	200	210	205	203
9	5	Marrickville	110	128	147	-	130	-	174	177
10	6	Mosman	-	258	455	470	465	538	450	545

8) Insert two new rows above the current Date row.

	A	B	C	D	E	F	G	H	I	J	K
1	Non strata										
2											
3											
4		Area/Ring/SA	Mar-1991	Jun-1991	Sep-1991	Dec-1991	Mar-1992	Jun-1992	Sep-1992	Dec-1992	Mar-1993
5		Greater Sydney	152	155	160	173	169	175	175	175	170
6		Inner Ring	155	210	215	245	252	256	255	255	235
7	1	Ashfield	189	211	195	209	-	-	180	201	221
8	2	Botany Bay	194	185	190	175	181	187	183	207	184
9	3	Lane Cove	-	-	291	267	360	331	316	301	328
10	4	Leichhardt	-	195	198	201	200	210	205	203	207

Copy the CPI columns into rows

1) Return to your CPI worksheet
2) Copy the two columns for Date and CPI
3) Return to your Median Prices worksheet
4) Highlight the cell in Column B uppermost of your new rows.
   a) (Cell B2 in my worksheet)
5) In the *Ribbon*, find the *Paste* button, and hit the Down-Arrow on the Paste button to see a drop-down list.



6) Select *Transpose*

	A	B	C	D	E	F	G	H	I	J	K
1		Non strata									
2		Quarter	Mar-1991	Jun-1991	Sep-1991	Dec-1991	Mar-1992	Jun-1992	Sep-1992	Dec-1992	Mar-1993	Jur
3		Housing CPI	57.1	57.2	56.1	55.9	54.8	54.0	53.3	53.0	53.3	
4		Area/Ring/SA	Mar-1991	Jun-1991	Sep-1991	Dec-1991	Mar-1992	Jun-1992	Sep-1992	Dec-1992	Mar-1993	Jun
5		Greater Sydney	152	155	160	173	169	175	175	175	170	
6		Inner Ring	155	210	215	245	252	256	255	255	235	
7	1	Ashfield	189	211	195	209	-	-	180	201	221	
8	2	Botany Bay	194	185	190	175	181	187	183	207	184	
9	3	Lane Cove	-	-	291	267	360	331	316	301	328	
10	4	Leichhardt	-	195	198	201	200	210	205	203	207	

7) Check that the dates on both of the dates rows correspond with each other!

a) When you are satisfied that the dates correspond, then you can delete one of the dates rows.

SAVE YOUR WORK.

Inflation adjustment calculation

1) Make a copy of your Worksheet (just in case)
2) Copy the whole data array and paste directly below the original data array.
   a) This ensures that all headings are in the right places.

54	45	Kiama	-	150	162	158	170	168	175	145	170	165	160	172	166	184
55	46	Lake Macquarie	110	115	114	118	120	119	120	120	122	124	121	127	126	127
56	47	Maitland	93	95	102	105	108	110	112	108	107	110	109	114	109	108
57	48	Newcastle	124	105	110	110	112	110	115	118	115	120	118	120	120	121
58	49	Port Stephens	114	130	128	135	125	120	110	125	-	-	-	-	-	-
59	50	Shellharbour	-	114	117	115	124	120	124	125	120	124	123	126	130	129
60	51	Wollongong	-	127	127	131	-	-	-	-	-	-	-	-	-	-
61		Rest of New South Wale	95	98	95	95	97	98	103	102	104	102	103	105	106	108
62		NEW SOUTH WALES	112	129	133	132	130	135	135	133	137	140	142	145	145	148
63																
64																
65		Quarter	Mar-1991	Jun-1991	Sep-1991	Dec-1991	Mar-1992	Jun-1992	Sep-1992	Dec-1992	Mar-1993	Jun-1993	Sep-1993	Dec-1993	Mar-1994	Jun-1994	Sep
66		Housing CPI	57.1	57.2	56.1	55.9	54.8	54.0	53.3	53.0	53.3	53.7	53.7	52.8	52.9	53.5	
67		Area/Ring/SA	Mar-1991	Jun-1991	Sep-1991	Dec-1991	Mar-1992	Jun-1992	Sep-1992	Dec-1992	Mar-1993	Jun-1993	Sep-1993	Dec-1993	Mar-1994	Jun-1994	Sep-
68		Greater Sydney	152	155	160	173	169	175	175	175	170	177	177	180	182	184	
69		Inner Ring	155	210	215	245	252	256	255	255	235	254	250	270	263	280	
70	1	Ashfield	189	211	195	209	-	-	180	201	221	215	215	219	226	239	
71	2	Botany Bay	194	185	190	175	181	187	183	207	184	191	210	225	215	234	
72	3	Lane Cove	-	-	291	267	360	331	316	301	328	338	340	366	366	386	
73	4	Leichhardt	-	195	198	201	200	210	205	203	207	215	217	230	240	249	

3) Highlight the data cell in the upper left of your new data array. (Greater Sydney – March 1991)
   a) In my worksheet, this is *Cell D69*.
      i) Yours may be different. That doesn't matter.
   b) Note, in my worksheet, the first CPI figure is located in *Cell D5*,(57.1 for CPI in March '91) and the first Price datum is in *Cell D7* (for greater Sydney)
      i) You will need to adjust your formulae accordingly if your first numbers are in different cells.
4) In my *Cell D69*, type the formula: `=C7/(C$5/100)`
   a) That is, Adjusted Price equals original price divided by CPI/100. (Dividing by 100 simply changes the Index out of 100 into a decimal.)
   b) Note the "$" symbol, which ensures that the row reference is absolute, but column references are relative.

D69 | =D7/(D$5/100)

	A	B	C	D	E	F	G	H	I	J	K
1		Non Strata Dwellings									
2			Local	Median Sale Prices ($'000) by Quarter							
3	Code		Government	notes: (s) 30 or less sales contracted; (-) 10 or less sales contracted;							
4			Quarter	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92	Jun-92	Sep-92	Dec-92
5			Housing CPI	57.1	57.2	56.1	55.9	54.8	54.0	53.3	53.0
6			Area/Ring/SA	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92	Jun-92	Sep-92	Dec-92
60	6400	49	Port Stephens	114	130	128	135	125	120	110	125
61	6900	50	Shellharbour	-	114	117	115	124	120	124	125
62	8450	51	Wollongong	-	127	127	131	-	-	-	-
63	1		GMR	132	143	148	155	152	160	158	155
64	1		Rest of New South Wales	95	98	95	95	97	97	103	102
65	1		NEW SOUTH WALES	112	129	133	132	130	135	135	133
66											
67											
68			Area/Ring/SA	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92	Jun-92	Sep-92	Dec-92
69			Greater Sydney	264	155	160	173	170	175	175	175
70			Inner Ring	155	210	215	245	252	256	255	255
71			Ashfield	189	211	195	209	-	-	180	201
72			Botany Bay	194	185	190	175	181	187	183	207
73			Lane Cove	-	-	291	267	360	331	316	301

5) Check that your formula makes sense.
   a) $152 in March 1991 converts to $266 in January 2012. Yes, that makes sense.
6) Copy the formula across to all columns in the data and then down to all rows in the data.
7) Check that your conversions make sense.
   a) Pick a cell further to the right and further down, and check the formula:
      i) Does it refer to a divisor in *Row 5*?
      ii) Does it refer to the correct numerator in the corresponding cell for the date and location?
   b) If the result is not right, then undo, check your formula and your cell references, and try again.

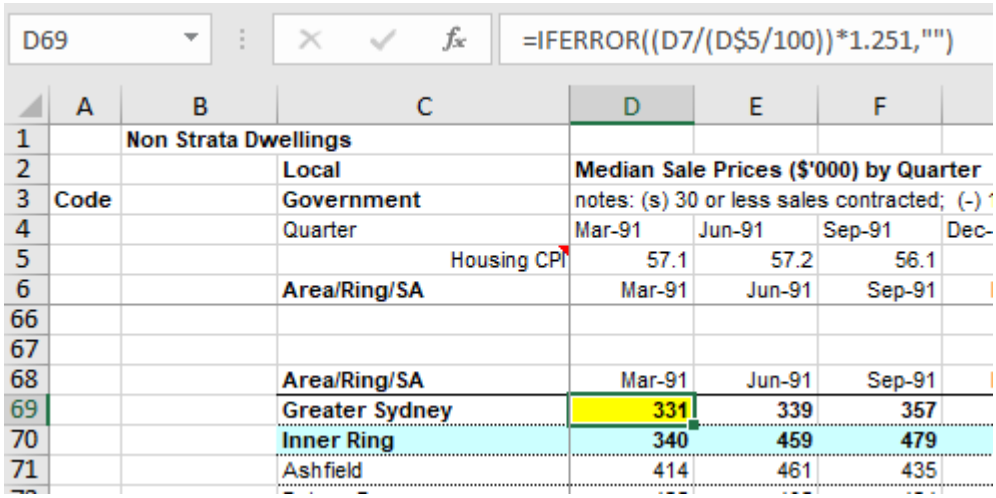
Clipboard | Font | Align

CK75 | =CK13/(CK$5/100)

	A	B	C	CI	CJ	CK	CL	CM
1		Non Strata Dwellings						
2			Local					
3	Code		Government					
4			Quarter	Dec-11	Mar-12	Jun-12	Sep-12	Dec-12
5			Housing CPI	99.8	100.1	101.0	104.3	105.1
6			Area/Ring/SA	Dec-11	Mar-12	Jun-12	Sep-12	Dec-12
73			Lane Cove	1,258	1,396	1,399	1,155	1,284
74			Leichhardt	901	967	899	858	907
75			Marrickville	768	764	752	757	780
76			Mosman	2,034	2,198	2,030	1,870	1,882
77			North Sydney	1,306	1,219	1,518	1,309	1,261
78			Randwick	1,152	1,249	1,186	1,208	1,142
79			Sydney	845	867	881	799	866

Note that the CPI is arbitrarily set so that January 2012 is 100. So all prices are now in January 2012 prices. With inflation, all prices before January 2012 will go up with adjustment, and prices after January 2012 will go down with adjustment. If you like, you can

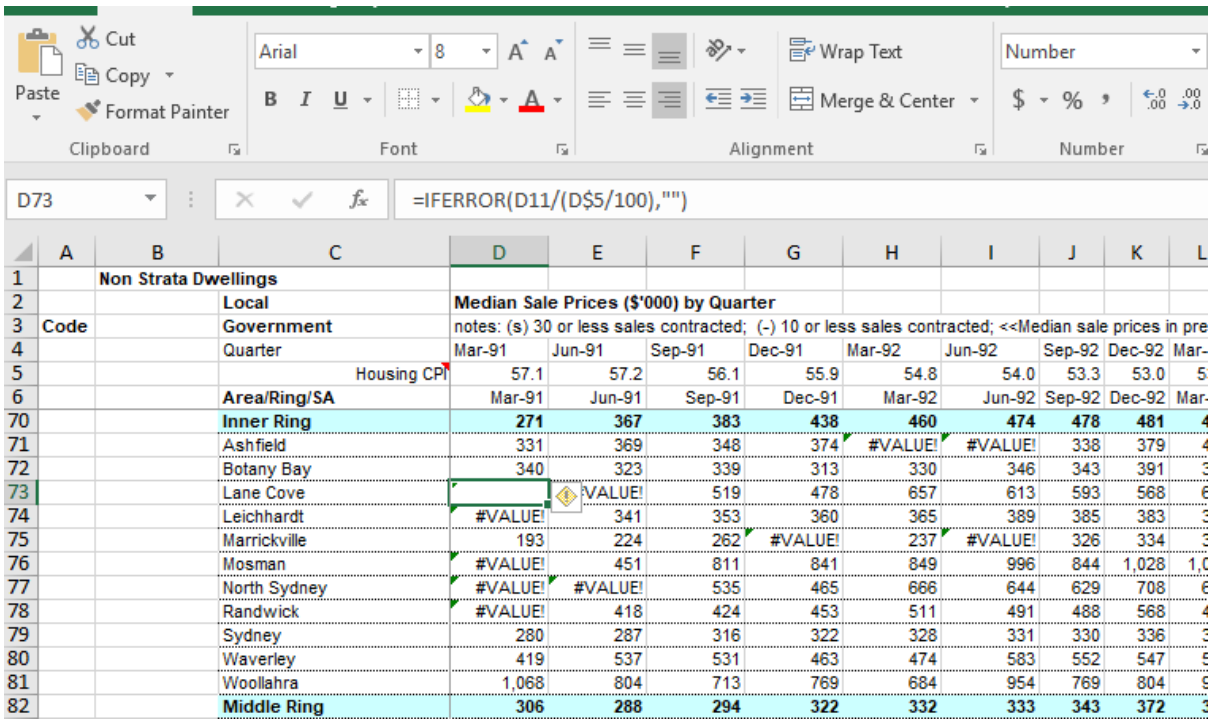
change prices to December 2016 prices by multiplying everything by 1.19. Or you could change the January 2012 prices to June 2018 prices by multiplying everything by 1.251. Do you see why? Does it make a difference to your decision-making?



D69 =IFERROR((D7/(D$5/100))*1.251,"")

	A	B	C	D	E	F
1		Non Strata Dwellings				
2			Local	Median Sale Prices ($'000) by Quarter		
3	Code		Government	notes: (s) 30 or less sales contracted; (-)		
4			Quarter	Mar-91	Jun-91	Sep-91
5			Housing CPI	57.1	57.2	56.1
6			Area/Ring/SA	Mar-91	Jun-91	Sep-91
66						
67						
68			Area/Ring/SA	Mar-91	Jun-91	Sep-91
69			Greater Sydney	331	339	357
70			Inner Ring	340	459	479
71			Ashfield	414	461	435

8) Did you notice that missing values produce `#VALUE!` errors in your calculations?
   - You can remove these errors by wrapping the CPI adjustment formula in an IFERROR command.
   - Copy this formula to all cells in your adjusted prices matrix.



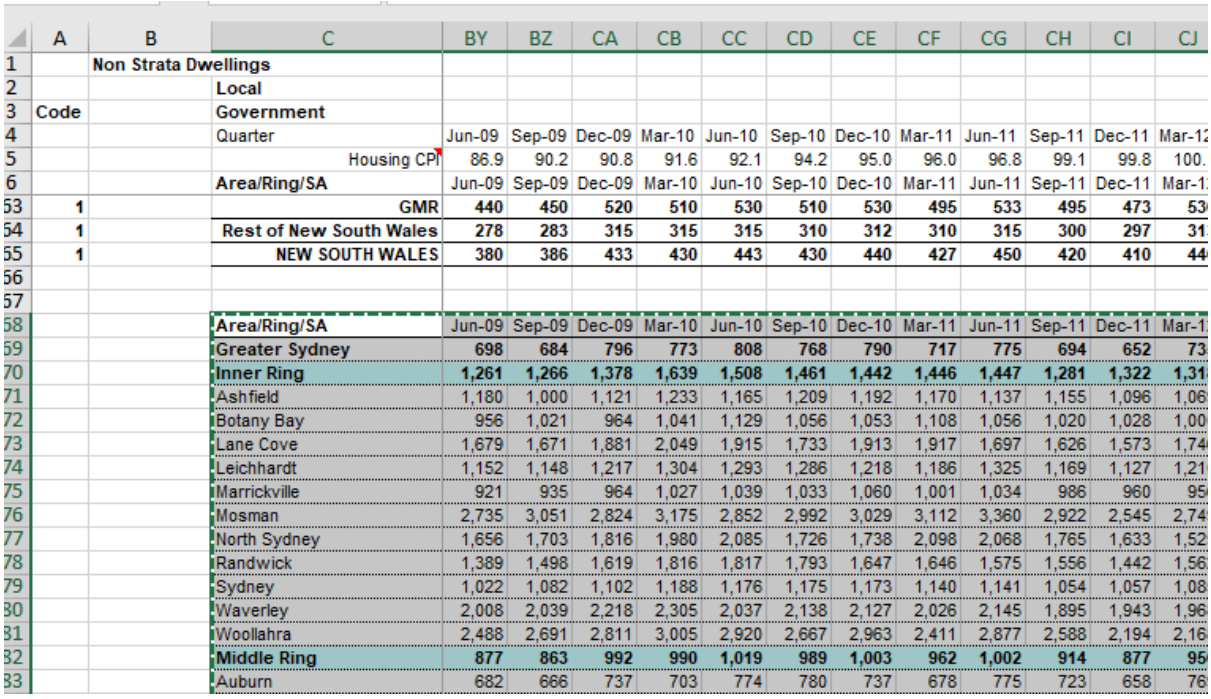
Cut Copy Format Painter Paste | Arial 8 | Wrap Text | Merge & Center | Number | Clipboard | Font | Alignment | Number

D73 =IFERROR(D11/(D$5/100),"")

	A	B	C	D	E	F	G	H	I	J	K	L
1		Non Strata Dwellings										
2			Local	Median Sale Prices ($'000) by Quarter								
3	Code		Government	notes: (s) 30 or less sales contracted; (-) 10 or less sales contracted; <<Median sale prices in pre								
4			Quarter	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92	Jun-92	Sep-92	Dec-92	Mar-
5			Housing CPI	57.1	57.2	56.1	55.9	54.8	54.0	53.3	53.0	5
6			Area/Ring/SA	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92	Jun-92	Sep-92	Dec-92	Mar-
70			Inner Ring	271	367	383	438	460	474	478	481	4
71			Ashfield	331	369	348	374	#VALUE!	#VALUE!	338	379	4
72			Botany Bay	340	323	339	313	330	346	343	391	3
73			Lane Cove		VALUE!	519	478	657	613	593	568	6
74			Leichhardt	#VALUE!	341	353	360	365	389	385	383	3
75			Marrickville	193	224	262	#VALUE!	237	#VALUE!	326	334	3
76			Mosman	#VALUE!	451	811	841	849	996	844	1,028	1,0
77			North Sydney	#VALUE!	#VALUE!	535	465	666	644	629	708	6
78			Randwick	#VALUE!	418	424	453	511	491	488	568	4
79			Sydney	280	287	316	322	328	331	330	336	3
80			Waverley	419	537	531	463	474	583	552	547	5
81			Woollahra	1,068	804	713	769	684	954	769	804	9
82			Middle Ring	306	288	294	322	332	333	343	372	3

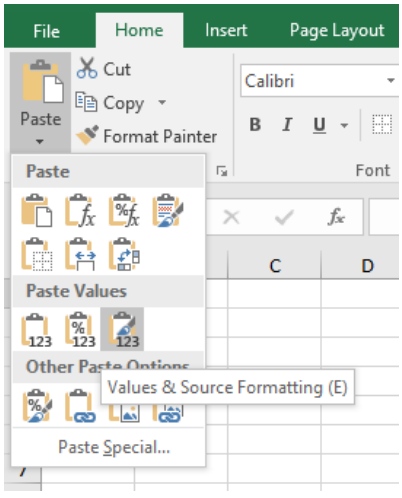
Save CPI-Adjusted prices to a new worksheet.

1) Highlight matrix of dates and CPI-adjusted Prices and Region-labels, copy and go to a new worksheet.

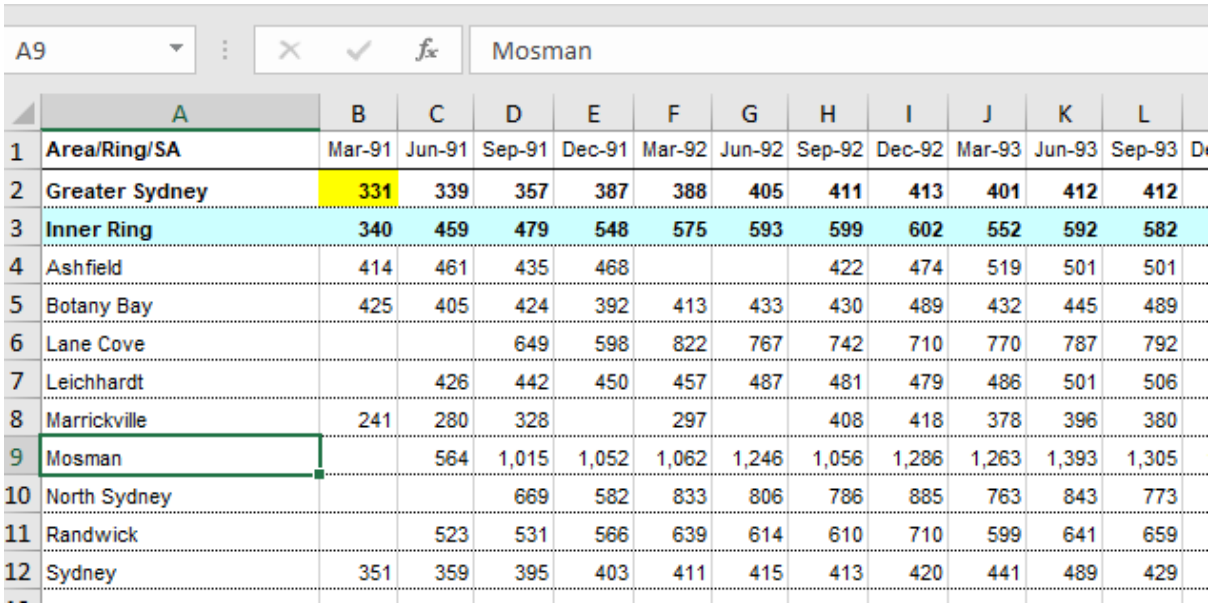


	A	B	C	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1		Non Strata Dwellings													
2			Local												
3	Code		Government												
4			Quarter	Jun-09	Sep-09	Dec-09	Mar-10	Jun-10	Sep-10	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-12
5			Housing CPI	86.9	90.2	90.8	91.6	92.1	94.2	95.0	96.0	96.8	99.1	99.8	100.
6			Area/Ring/SA	Jun-09	Sep-09	Dec-09	Mar-10	Jun-10	Sep-10	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-1
53	1		GMR	440	450	520	510	530	510	530	495	533	495	473	53
54	1		Rest of New South Wales	278	283	315	315	315	310	312	310	315	300	297	31
55	1		NEW SOUTH WALES	380	386	433	430	443	430	440	427	450	420	410	44
56															
57															
58			Area/Ring/SA	Jun-09	Sep-09	Dec-09	Mar-10	Jun-10	Sep-10	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-1
59			Greater Sydney	698	684	796	773	808	768	790	717	775	694	652	73
70			Inner Ring	1,261	1,266	1,378	1,639	1,508	1,461	1,442	1,446	1,447	1,281	1,322	1,31
71			Ashfield	1,180	1,000	1,121	1,233	1,165	1,209	1,192	1,170	1,137	1,155	1,096	1,06
72			Botany Bay	956	1,021	964	1,041	1,129	1,056	1,053	1,108	1,056	1,020	1,028	1,00
73			Lane Cove	1,679	1,671	1,881	2,049	1,915	1,733	1,913	1,917	1,697	1,626	1,573	1,74
74			Leichhardt	1,152	1,148	1,217	1,304	1,293	1,286	1,218	1,186	1,325	1,169	1,127	1,21
75			Marrickville	921	935	964	1,027	1,039	1,033	1,060	1,001	1,034	986	960	95
76			Mosman	2,735	3,051	2,824	3,175	2,852	2,992	3,029	3,112	3,360	2,922	2,545	2,74
77			North Sydney	1,656	1,703	1,816	1,980	2,085	1,726	1,738	2,098	2,068	1,765	1,633	1,52
78			Randwick	1,389	1,498	1,619	1,816	1,817	1,793	1,647	1,646	1,575	1,556	1,442	1,56
79			Sydney	1,022	1,082	1,102	1,188	1,176	1,175	1,173	1,140	1,141	1,054	1,057	1,08
80			Waverley	2,008	2,039	2,218	2,305	2,037	2,138	2,127	2,026	2,145	1,895	1,943	1,96
81			Woollahra	2,488	2,691	2,811	3,005	2,920	2,667	2,963	2,411	2,877	2,588	2,194	2,16
82			Middle Ring	877	863	992	990	1,019	989	1,003	962	1,002	914	877	95
83			Auburn	682	666	737	703	774	780	737	678	775	723	658	76

2) In *Cell A1*, hit Paste/Values



3) You should have a new dataset of Non-Strata housing prices ready for analysis.
   - Make a copy of this data set and
     i) remove any rows that you don't need
     ii) remove any columns that you don't need (think about how far back in time you really need to go for this sort of analysis – probably not much)



A9 | Mosman

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Area/Ring/SA**	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92	Jun-92	Sep-92	Dec-92	Mar-93	Jun-93	Sep-93
2	**Greater Sydney**	**331**	**339**	**357**	**387**	**388**	**405**	**411**	**413**	**401**	**412**	**412**
3	**Inner Ring**	**340**	**459**	**479**	**548**	**575**	**593**	**599**	**602**	**552**	**592**	**582**
4	Ashfield	414	461	435	468			422	474	519	501	501
5	Botany Bay	425	405	424	392	413	433	430	489	432	445	489
6	Lane Cove			649	598	822	767	742	710	770	787	792
7	Leichhardt		426	442	450	457	487	481	479	486	501	506
8	Marrickville	241	280	328		297		408	418	378	396	380
9	Mosman		564	1,015	1,052	1,062	1,246	1,056	1,286	1,263	1,393	1,305
10	North Sydney			669	582	833	806	786	885	763	843	773
11	Randwick		523	531	566	639	614	610	710	599	641	659
12	Sydney	351	359	395	403	411	415	413	420	441	489	429

SAVE YOUR WORK.

Now repeat this exercise with the Strata-title data.

You should be able to copy and paste some rows and some formulae from your Non-Strata data spreadsheet to save time.

SAVE YOUR WORK.

FEEL PROUD

-0-