

PIVOT TABLES

(continued...)

Filters

Filters

Analysis of a property portfolio.

Filters

Open the file:

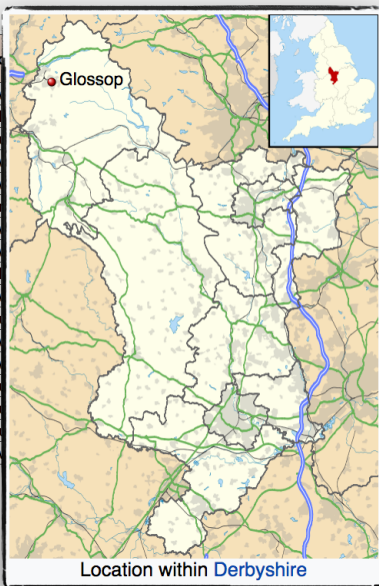
Property_portfolio_UK

The dataset

It's a property portfolio dataset (UK).

PostCode	Type	Location	No Bedrooms	No Bathrooms	Reception Rooms	Garden Size	Date on Market	Date Sold	Asking Price	Sale Price
SK13 7AZ	Detatched	Town	4	2	3	Medium	26/11/2017		£345.000	
SK22 9GT	Semi-detatched	Village	3	1	2	Small	18/07/2017	01/02/2018	£245.000	£238.500
SK13 6DD	Terraced	Countryside	2	1	2	Small	24/10/2017	19/12/2017	£199.000	£199.000
SK14 8DS	Detatched	Town	4	2	2	Large	18/10/2018	23/01/2018	£398.000	£387.500
SK13 7CW	Semi-detatched	Town	3	1	2	Medium	29/11/2017	19/12/2018	£329.000	£319.500
SK22 3YT	Detatched	Remote	4	2	3	Large	13/10/2017		£478.500	
SK13 4DF	Terraced	Town	2	1	2	Small	05/09/2017	16/01/2017	£213.000	£199.500
SK14 7AD	Semi-detatched	Town	3	2	2	Medium	29/10/2017	18/02/2018	£278.500	£277.000
SK13 2AA	Semi-detatched	Village	3	1	2	Large	11/08/2017		£278.500	
SK13 5YY	Terraced	Town	3	2	1	Small	30/10/2017	29/01/2018	£176.500	£174.300
SK14 9FT	Bungalow	Countryside	2	2	2	Medium	16/11/2017	13/01/2018	£223.750	£219.750
SK23 4RF	Flat	Town	1	1	1	None	15/11/2017		£135.000	
SK13 1GG	Terraced	Town	3	1	2	Small	05/01/2018	19/01/2018	£165.900	£168.000
SK13 6YH	Bungalow	Countryside	3	2	2	Large	15/09/2017	28/12/2017	£415.500	£419.500
SK13 6YH	Bungalow	Countryside	3	2	2	Large	15/09/2017	28/12/2017	£415.500	£419.500
SK13 6YH	Bungalow	Countryside	3	2	2	Large	15/09/2017	28/12/2017	£415.500	£419.500
SK13 6YH	Bungalow	Town	2	2	2	Medium	11/09/2017		£199.500	

PostCode	Type	Loc
SK13 7AZ		
SK22 9GT	Semi-detached	Vill
SK13 6DD	Terraced	Co
SK14 8DS	Detached	Tov
SK13 7CW	Semi-detached	Tov
SK22 3YT	Detached	Re
SK13 4DF	Terraced	Tov
SK14 7AD	Semi-detached	Tov
SK13 2AA	Semi-detached	Vill
SK13 5YY	Terraced	Tov
SK14 9FT	Bungalow	Co
SK23 4RF	Flat	Tov
SK13 1GG	Terraced	Tov
SK13 6YH	Bungalow	Co
SK13 6YH	Bungalow	Co
SK13 6YH	Bungalow	Co
SK13 6YH	Bungalow	Tov



	Date on Market	Date Sold	Asking Price	Sale Price
um	26/11/2017		£345.000	
ll	18/07/2017	01/02/2018	£245.000	£238.500
ll	24/10/2017	19/12/2017	£199.000	£199.000
e	18/10/2018	23/01/2018	£398.000	£387.500
um	29/11/2017	19/12/2018	£329.000	£319.500
e	13/10/2017		£478.500	
ll	05/09/2017	16/01/2017	£213.000	£199.500
um	29/10/2017	18/02/2018	£278.500	£277.000
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ll	30/10/2017	29/01/2018	£176.500	£174.300
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um	11/09/2017		£199.500	

SK13 = Glossop, Derbyshire, UK

PostCode	Type	Location	Bedrooms	Bathrooms	Plot Size	Garden Size	Date on Market	Date Sold	Asking Price	Sale Price
SK13 7AZ	Detatched	 				Medium	26/11/2017		£345.000	
SK22 9GT	Semi-detatched					Small	18/07/2017	01/02/2018	£245.000	£238.500
SK13 6DD	Terraced		Countryside			Small	24/10/2017	19/12/2017	£199.000	£199.000
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SK13 6YH	Bungalow	Town	2	2	2	Medium	11/09/2017		£199.500	

PostCode	Type	Location	No Bedroom	No Bathroom	Reception Rooms	Ground Floor	Date on Market	Date Sold	Asking Price	Sale Price
SK13 7AZ	Detatched	Town	3	2	2	Small	26/11/2017		£345.000	
SK22 9GT	Semi-detatched	Town	3	2	2	Small	18/07/2017	01/02/2018	£245.000	£238.500
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SK13 6YH	Bungalow	Town	2	2	2	Medium	11/09/2017		£199.500	

Filters

PROPERTY PORTFOLIO

How many entries in the property portfolio have simultaneously:

Filters

PROPERTY PORTFOLIO

How many entries in the property portfolio have simultaneously:

1. 3 bedrooms,

Filters

PROPERTY PORTFOLIO

How many entries in the property portfolio have simultaneously:

1. 3 bedrooms,
2. a medium size garden,

Filters

PROPERTY PORTFOLIO

How many entries in the property portfolio have simultaneously:

1. 3 bedrooms,
2. a medium size garden,
3. 2 bathrooms.

Filters

PROPERTY PORTFOLIO

How many entries in the property portfolio have simultaneously:

1. 3 bedrooms,
2. a medium size garden,
3. 2 bathrooms.

In particular

Which types of apartments satisfy $1)+2)+3)$, and where are they located?

PivotTable Fields



FIELD NAME

Search fields

- ☐ PostCode
- ☐ Type
- ☐ Location
- ☐ No Bedrooms
- ☐ No Bathrooms
- ☐ Reception Rooms
- ☐ Garden Size
- ☐ Date on Market
- ☐ Date Sold
- ☐ Asking Price
- ☐ Sale Price

 Filters

 Columns

 Rows

 Values

Drag fields between areas



120%

PivotTable Fields

FIELD NAME

Search fields

- ☐ PostCode
- ☐ Type
- ☐ Location
- ☐ No Bedrooms
- ☐ No Bathrooms
- ☐ Reception Rooms
- ☐ Garden Size
- ☐ Date on Market
- ☐ Date Sold
- ☒ Asking Price
- ☐ Sale Price

Filters

Columns

Rows

Values

Sum of Asking Price

Drag fields between areas

PivotTable Fields



FIELD NAME

Search fields

- ☐ PostCode
- ☒ Type
- ☐ Location
- ☐ No Bedrooms
- ☐ No Bathrooms
- ☐ Reception Rooms
- ☐ Garden Size
- ☐ Date on Market
- ☐ Date Sold
- ☒ Asking Price
- ☐ Sale Price

Filters

Columns

Rows

Values

Type

Sum of Asking Price

Drag fields between areas



120%

PivotTable Fields

FIELD NAME

Search fields

- ☐ PostCode
- ☒ Type
- ☒ Location
- ☐ No Bedrooms
- ☐ No Bathrooms
- ☐ Reception Rooms
- ☐ Garden Size
- ☐ Date on Market
- ☐ Date Sold
- ☒ Asking Price
- ☐ Sale Price

Filters

Columns

Location

Rows

Values

Type

Sum of Asking Price

Drag fields between areas

Sum of Asking Price	Column Labels 				
Row Labels 	Countryside	Remote	Town	Village	Grand Total
Bungalow	3329500	562000	499450		4390950
Detatched	1350250	1717500	2265250		5333000
Flat			310500		310500
Semi-detatched	2289500	176500	2499500	523500	5489000
Terraced	582000	142500	1062500		1787000
Grand Total	7551250	2598500	6637200	523500	17310450

Filters

Columns

Location

Rows

Type

Values

Sum of Asking Price

Drag fields between areas

-

+

160%

PivotTable Field

Source field: Asking Price

Field name: Count of Asking Price

Summarize by

Show data as

Sum

Count

Average

Max

Min

Product

Count Numbers

StdDev

Number...

Cancel

OK

Count of Asking Price		Column Labels 			
Row Labels 	Countryside	Remote	Town	Village	Grand Total
Bungalow	9	2	2		13
Detached	3	4	6		13
Flat			2		2
Semi-detached	7	1	8	2	18
Terraced	3	1	6		10
Grand Total	22	8	24	2	56

PivotTable Fields

FIELD NAME

Search fields

- ☒ PostCode
- ☒ Type
- ☒ Location
- ☒ No Bedrooms
- ☒ No Bathrooms
- ☒ Reception Rooms
- ☒ Garden Size
- ☒ Date on Market
- ☒ Date Sold
- ☒ Asking Price
- ☒ Sale Price

Put all the remaining fields in "Filters"

Filters

- ☒ PostCode
- ☒ No Bedrooms
- ☒ No Bathrooms
- ☒ Reception Rooms
- ☒ Garden Size
- ☒ Date on Market
- ☒ Date Sold
- ☒ Sale Price

Columns

Location

Rows

Type

Values

Count of Asking Price

Drag fields between areas

PostCode	(All)	▼				
No Bedrooms	(All)	▼				
No Bathrooms	(All)	▼				
Reception Rooms	(All)	▼				
Garden Size	(All)	▼				
Date on Market	(All)	▼				
Date Sold	(All)	▼				
Sale Price	(All)	▼				
Count of Asking Price	Column Labels	▼				
Row Labels	▼	Countryside	Remote	Town	Village	Grand Total
Bungalow		9	2	2		13
Detached		3	4	6		13
Flat				2		2
Semi-detached		7	1	8	2	18
Terraced		3	1	6		10
Grand Total		22	8	24	2	56

PostCode	(All)	▼
No Bedrooms	(All)	▼
No Bathrooms	(All)	▼
Reception Rooms	(All)	▼
Garden Size	(All)	▼
Date on Market	(All)	▼
Date Sold	(All)	▼
Sale Price	(All)	▼

Count of Asking Price	Column Labels
Row Labels	Countryside

Bungalow					3
Detached	3	4	6		13
Flat			2		2
Semi-detached	7	1	8	2	18
Terraced	3	1	6		10
Grand Total	22	8	24	2	56

We can now apply filters data according to the values of the remaining fields

PostCode	(All)	▼
No Bedrooms	3	▼
No Bathrooms	(All)	▼
Reception Rooms	(All)	▼
Garden Size	(All)	▼
Date on Market	(All)	▼
Date Sold	(All)	▼
Sale Price	(All)	▼

No Bedrooms

Search

☒ (Select All)

☐ 1

☐ 2

☒ 3

☐ 4

☐ 5

Clear Filter

Count of Asking Price

Row Labels ▼

Column Labels ▼

Countryside

Bungalow	8				
Detatched		1	2		3
Semi-detatched	6		7	2	15
Terraced			2		2
Grand Total	14	3	11	2	30

Remote	Town	Village	Grand Total

PostCode	(All)	▼
No Bedrooms	3	▼
No Bathrooms	(All)	▼
Reception Rooms	(All)	▼
Garden Size	Medium	▼
Date on Market	(All)	▼
Date Sold	(All)	▼
Sale Price	(All)	▼

Count of Asking Price	Column Labels	▼
Row Labels	Countryside	▼
Detached		
Semi-detached		6
Grand Total		6 8 14

Garden Size

Search

☒ (Select All)

☐ Large

☒ Medium

☐ None

☐ Small

Clear Filter

PostCode	(All)	
No Bedrooms	3	
No Bathrooms	2	
Reception Rooms	(All)	
Garden Size	Medium	
Date on Market	(All)	
Date Sold	(All)	
Sale Price	(All)	

No Bathrooms

Search

☐ (Select All)

☐ 1

☒ 2

☐ 3

Clear Filter

Count of Asking Price	Column Labels		
Row Labels	Countryside		
Detached		1	1
Semi-detached		6	5
Grand Total		6	6

PostCode	(All)			
No Bedrooms	3			
No Bathrooms	2			
Reception Rooms	(All)			
Garden Size	Medium			
Date on Market	(All)			
Date Sold	(All)			
Sale Price	(All)			
Count of Asking Price	Location			
Type		Countryside	Town	Grand Total
Detatched			1	1
Semi-detatched		6	5	11
Grand Total		6	6	12

No Bedrooms 3

No Bathrooms 2

Garden Size Medium

No detached units with these features in the countryside.

Count of Asking Price		Location		Grand Total
Type		☐ Countryside	☐ Town	
Detached		☐	1	1
Semi-detached		6	5	11
Grand Total		6	6	12

No Bedrooms 3

No Bathrooms 2

Garden Size Medium

6 semi-detached units
with these features in the
countryside.

Count of Asking Price		Location		Grand Total
Type		Countryside	Town	
Detached			1	1
Semi-detached		6	5	11
Grand Total		6	6	12

No Bedrooms 3

No Bathrooms 2

Garden Size Medium

1 detached unit with these features in Town.

Count of Asking Price		Location		
Type		Countryside	Town	Grand Total
Detached			1	1
Semi-detached		6	5	11
Grand Total		6	6	12

No Bedrooms 3

No Bathrooms 2

Garden Size Medium

5 semi-detached units
with these features in
Town

Count of Asking Price		Location		
Type		☐ Countryside	☐ Town	Grand Total
Detached			1	1
Semi-detached		6	5	11
Grand Total		6	6	12

No Bedrooms 3

No Bathrooms 2

Garden Size Medium

12 units in total.

Count of Asking Price		Location		Grand Total
Type		Countryside	Town	
Detached			1	1
Semi-detached		6	5	11
Grand Total		6	6	12

Filters

Open the file:

Property_portfolio_US

The dataset

It's a property portfolio dataset (US).

Question #1

YOUR TURN

What is the maximum estimated market price for a unit with 4 bathrooms in Alabama and in West Virginia?

Question #1

What is the maximum estimated market price for a unit with 4 bathrooms in Alabama and in West Virginia?

The screenshot shows a Tableau dashboard configuration with four panes:

- Filters:** Contains the field "State".
- Columns:** Contains the field "Number of bathrooms".
- Rows:** Contains the field "Number of bedrooms".
- Values:** Contains the field "Max of Estimated Market Price (\$)".

Each field in the panes has an information icon (i) to its right. A blue circular icon with a white diamond pattern is visible on the right edge of the Columns pane.

Question #1

What is the maximum estimated market price for a unit with 4 bathrooms in Alabama and in West Virginia?

State	(Multiple Items) 
-------	--

	Number of bathrooms 			
	2	3	4	Grand Total
Max. of Estimated Market Price (\$)	208885,8	206492	209247	209247

Question #2

YOUR TURN

How many units in Texas have a garden?

Question #2

How many units in Texas have a garden?

State	Texas
-------	-------

Garden (Y/N)	Count of Garden (Y/N)
N	213
Y	197
Grand Total	410

Question #3

YOUR TURN

What is the difference between the average estimated market price in Alabama for a unit with a garden and a unit without?

Question #3

What is the difference between the average estimated market price in Alabama for a unit with a garden and a unit without?

Pivot Table Field

Source field: Estimated Market Price (\$)

Field name: Average of Estimated Market Price (\$)

Summarise by Show data as

Difference From

Base field: Base item:

Energy Consu...	(previous)
Number of bat...	(next)
Number of be...	N
Square Foots	Y
Garden (Y/N)	

Number... Cancel OK

State	Alabama
-------	---------

Garden (Y/N)	Average of Estimated Market Price (\$)
N	
Y	11,70285475
Grand Total	

Question #4

YOUR TURN

Which is the percentage, relative to all the units, of the number of units with a number of residents greater or equal to 5?

Question #4

Which is the percentage, relative to all the units, of the number of units with a number of residents greater or equal to 5?

Pivot Table Field

Source field: Number of residents

Field name: Count of Number of residents

Summarise by Show data as

% of Grand Total

Base field: Base item:

State
Number of residents
Energy Consumption
Number of bathroom
Number of bedroom

Number... Cancel OK

Number of residents	Count of Number of residents
2	19,95%
3	19,86%
4	19,90%
5	20,06%
6	20,24%
Grand Total	100,00%
	40,30%

Corrupted data

Open the file:

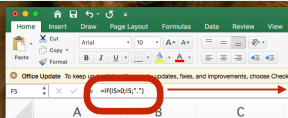
Education and working condition

The dataset

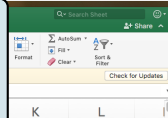
6366 full-time workers in five North-Central States, March 1999.

Topic 3_Exercise 3_Elaborated.xls (Compatibility Mode)													
Office Update To keep up-to-date with security updates, fixes, and improvements, choose Check for Updates.													
6366 full-time workers in five North-Central States, March 1999													
Recoded Variables								Original					
Usual Hours Worked	Education (yrs)	Yearly Earnings	Ethnic Group	Sex	Usual Weekly Earnings	State	Month in Sample	A_GRSWK	PMHRUSLT	A_AGE	A_HGA	A_RV	
40	13	\$ 44.000	White	Male	\$ 858	Ohio	8	858	40	29	40		
35	12	\$ 12.000	White	Female	.	Ohio	3	0	35	57	39		
70	11	\$ 54.000	White	Male	.	Ohio	3	0	70	69	37		
40	16	\$ 48.200	White	Male	.	Ohio	7	0	40	30	43		
38	12	\$ 24.000	White	Male	.	Ohio	2	0	38	44	39		
60	18	\$ 62.000	White	Female	.	Ohio	5	0	60	45	44		
40	13	\$ 17.000	White	Female	.	Ohio	5	0	40	20	40		
50	8	\$ 25.000	Black	Male	.	Ohio	5	0	50	60	33		
40	11	\$ 10.000	Black	Male	.	Ohio	5	0	40	27	37		
50	16	\$ 65.000	White	Male	.	Ohio	7	0	50	56	43		
45	12	\$ 30.000	White	Male	.	Ohio	2	0	45	44	39		
50	16	\$ 306.731	White	Male	.	Ohio	1	0	50	37	43		
50	11	\$ 37.000	White	Male	\$ 643	Ohio	4	643	50	45	37		
40	12	\$ 34.000	White	Male	\$ 600	Ohio	4	600	40	51	39		
40	13	\$ 25.000	White	Male	\$ 520	Ohio	4	520	40	28	40		
40	12	\$ 42.000	White	Male	\$ 680	Ohio	8	680	40	44	39		
40	16	\$ 68.000	White	Male	.	Ohio	6	0	40	43	43		
50	13	\$ 70.000	White	Male	.	Ohio	6	0	50	52	40		
40	12	\$ 25.000	White	Female	.	Ohio	7	0	40	59	39		
35	13	\$ 15.400	White	Female	.	Ohio	7	0	35	30	40		
40	13	\$ 56.426	White	Male	.	Ohio	7	0	40	50	40		

“Elaborated data” (from A to H)
are complex functions of raw
original data (remaining columns).



Data											Original				
6366 full-time workers in five North-Central States, March 1999															
Recoded Variables															
Usual Hours Worked	Education (yrs)	Yearly Earnings	Ethnic Group	Sex	Usual Weekly Earnings	State	Month in Sample	A_GRSWK	PMHRUSLT	A_AGE	A_HGA	A_RV			
40	13	\$ 44.000	White	Male	\$ 858	Ohio	8	858	40	29	40				
35	12	\$ 12.000	White	Female	.	Ohio	3	0	35	57	39				
70	11	\$ 54.000	White	Male	.	Ohio	3	0	70	69	37				
40	16	\$ 48.200	White	Male	.	Ohio	7	0	40	30	43				
38	12	\$ 24.000	White	Male	.	Ohio	2	0	38	44	39				
60	18	\$ 62.000	White	Female	.	Ohio	5	0	60	45	44				
40	13	\$ 17.000	White	Female	.	Ohio	5	0	40	20	40				
50	8	\$ 25.000	Black	Male	.	Ohio	5	0	50	60	33				
40	11	\$ 10.000	Black	Male	.	Ohio	5	0	40	27	37				
50	16	\$ 65.000	White	Male	.	Ohio	7	0	50	56	43				
45	12	\$ 30.000	White	Male	.	Ohio	2	0	45	44	39				
50	16	\$ 306.731	White	Male	.	Ohio	1	0	50	37	43				
50	11	\$ 37.000	White	Male	\$ 643	Ohio	4	643	50	45	37				
40	12	\$ 34.000	White	Male	\$ 600	Ohio	4	600	40	51	39				
40	13	\$ 25.000	White	Male	\$ 520	Ohio	4	520	40	28	40				
40	12	\$ 42.000	White	Male	\$ 680	Ohio	8	680	40	44	39				
40	16	\$ 68.000	White	Male	.	Ohio	6	0	40	43	43				
50	13	\$ 70.000	White	Male	.	Ohio	6	0	50	52	40				
40	12	\$ 25.000	White	Female	.	Ohio	7	0	40	59	39				
35	13	\$ 15.400	White	Female	.	Ohio	7	0	35	30	40				
40	13	\$ 56.426	White	Male	.	Ohio	7	0	40	50	40				



The are missing values!!

Data

6366 full-time workers in five North-Central States, March 1999

Recoded Variables

Original

	Usual Hours Worked	Education (yrs)	Yearly Earnings	Ethnic Group	Sex	Usual Weekly Earnings	State	Month in Sample	A_GRSWK	PMHRUSLT	A_AGE	A_HGA	A_RV
5	40	13	\$ 44.000	White	Male	\$ 858	Ohio	8	858	40	29	40	
6	35	12	\$ 12.000	White	Female	.	Ohio	3	0	35	57	39	
7	70	11	\$ 54.000	White	Male	.	Ohio	3	0	70	69	37	
8	40	16	\$ 48.200	White	Male	.	Ohio	7	0	40	30	43	
9	38	12	\$ 24.000	White	Male	.	Ohio	2	0	38	44	39	
10	60	18	\$ 62.000	White	Female	.	Ohio	5	0	60	45	44	
11	40	13	\$ 17.000	White	Female	.	Ohio	5	0	40	20	40	
12	50	8	\$ 25.000	Black	Male	.	Ohio	5	0	50	60	33	
13	40	11	\$ 10.000	Black	Male	.	Ohio	5	0	40	27	37	
14	50	16	\$ 65.000	White	Male	.	Ohio	7	0	50	56	43	
15	45	12	\$ 30.000	White	Male	.	Ohio	2	0	45	44	39	
16	50	16	\$ 306.731	White	Male	.	Ohio	1	0	50	37	43	
17	50	11	\$ 37.000	White	Male	\$ 643	Ohio	4	643	50	45	37	
18	40	12	\$ 34.000	White	Male	\$ 600	Ohio	4	600	40	51	39	
19	40	13	\$ 25.000	White	Male	\$ 520	Ohio	4	520	40	28	40	
20	40	12	\$ 42.000	White	Male	\$ 680	Ohio	8	680	40	44	39	
21	40	16	\$ 68.000	White	Male	.	Ohio	6	0	40	43	43	
22	50	13	\$ 70.000	White	Male	.	Ohio	6	0	50	52	40	
23	40	12	\$ 25.000	White	Female	.	Ohio	7	0	40	59	39	
24	35	13	\$ 15.400	White	Female	.	Ohio	7	0	35	30	40	
25	40	13	\$ 56.426	White	Male	.	Ohio	7	0	40	50	40	

Office Update To keep up-to-date with security updates, fixes, and improvements, choose Check for Updates. Check for Updates

Topic_3_Exercise_3_Elaborated.xlsx (Compatibility Mode)

Home Insert Draw Page Layout Formulas Data Review View

File Home Insert Draw Page Layout Formulas Data Review View

Office Update To keep up-to-date with security updates, fixes, and improvements, choose Check for Updates. Check for Updates

1 Data

2 6366 full-time workers in five North-Central States, March 1999

3 Recoded Variables Original Variables

	Usual Hours Worked	Education (yrs)	Yearly Earnings	Ethnic Group	Sex	Weekly Earnings	State	Month in Sample	A_GRSWK	PMHRUSLT	A_AGE	A_HGA	A_RACE	A_SEX
4	40	13	\$ 44,000	White	Male	\$ 858	Ohio	8	858	40	29	40	1	
5	35	12	\$ 12,000	White	Female	.	Ohio	3	0	35	57	39	1	
6	70	11	\$ 54,000	White	Male	.	Ohio	3	0	70	69	37	1	
7	40	16	\$ 48,200	White	Male	.	Ohio	7	0	40	30	43	1	
8	38	12	\$ 24,000	White	Male	.	Ohio	2	0	38	44	39	1	
9	60	18	\$ 62,000	White	Female	.	Ohio	5	0	60	45	44	1	
10	40	13	\$ 17,000							40	20	40	1	
11	50	8	\$ 25,000							50	60	33	2	
12	40	11	\$ 10,000							40	27	37	2	
13	50	16	\$ 65,000	White	Male	.	Ohio	7	0	50	56	43	1	
14	45	12	\$ 30,000	White	Male	.	Ohio	2	0	45	44	39	1	
15	50	16	\$ 306,731	White	Male	.	Ohio	1	0	50	37	43	1	
16	50	11	\$ 37,000	White	Male	\$ 643	Ohio	4	643	50	45	37	1	
17	40	12	\$ 34,000	White	Male	\$ 600	Ohio	4	600	40	51	39	1	
18	40	13	\$ 25,000	White	Male	\$ 520	Ohio	4	520	40	28	40	1	
19	40	12	\$ 42,000	White	Male	\$ 680	Ohio	8	680	40	44	39	1	
20	40	16	\$ 68,000	White	Male	.	Ohio	6	0	40	43	43	1	
21	50	13	\$ 70,000	White	Male	.	Ohio	6	0	50	52	40	1	
22	40	12	\$ 25,000	White	Female	.	Ohio	7	0	40	59	39	1	
23	35	13	\$ 15,400	White	Female	.	Ohio	7	0	35	30	40	1	
24	40	13	\$ 56,426	White	Male	.	Ohio	7	0	40	50	40	1	
25														

Select the first three lines

4 Intro Data Sheet1 Codebook Grouping Summary Stats Tables Q&A

Select destination and press ENTER or choose Paste

Count: 4 250%

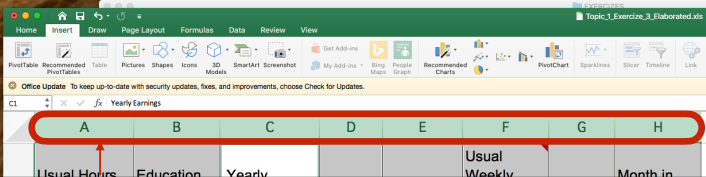
Microsoft Excel interface showing a dataset titled "Topic 3_Elaborated.xls (Compatibility Mode)". The ribbon includes Home, Insert, Draw, Page Layout, Formulas, Data, Review, and View. The "Data" tab is active, displaying a dataset with columns A through N. The dataset is divided into "Recoded Variables" (columns A-G) and "Original Variables" (columns H-N).

The "Recoded Variables" section includes columns: Usual Hours Worked, Education (yrs), Yearly Earnings, Ethnic Group, Sex, Usual Weekly Earnings, and Month in Sample. The "Original Variables" section includes columns: A_GRSWK, PMHRUSLT, A_AGE, A_HGA, A_RACE, and A_SEX.

A right-click context menu is open over the cell containing "Ohio" in the "Month in Sample" column (row 12, column G). The menu options are: Cut, Copy, Paste, Paste Special..., Insert, Delete, Clear Contents, Format Cells..., Row Height..., Hide, Unhide, and Services. The "Clear Contents" option is highlighted with a red circle.

A blue callout box with the text "Right-click and delete." points to the "Clear Contents" option in the context menu.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Data													
2	6366 full-time workers in five North-Central States, March 1999													
3	Recoded Variables							Original Variables						
4	Usual Hours Worked	Education (yrs)	Yearly Earnings	Ethnic Group	Sex	Usual Weekly Earnings	Month in Sample	A_GRSWK	PMHRUSLT	A_AGE	A_HGA	A_RACE	A_SEX	
5	40	13	\$ 44,000	White	Male	\$	Ohio	8	858	40	29	40	1	
6	35	12	\$ 12,000	White	Female	.	Ohio	3	0	35	57	39	1	
7	70	11	\$ 54,000	White	Male	.	Ohio	3	0	70	69	37	1	
8	40	16	\$ 48,200	White	Male	.	Ohio	7	0	40	30	43	1	
9	38	12	\$ 24,000	White	Male	.	Ohio	2	0	38	44	39	1	
10	60	18	\$ 62,000	White	Female	.	Ohio	5	0	60	45	44	1	
11	40	13	\$ 17,000	White	Female	.	Ohio	5	0	40	20	40	1	
12	50	8	\$ 25,000	White	Male	.	Ohio	0	0	50	60	33	2	
13	40	11	\$ 10,000	White	Male	.	Ohio	0	0	40	27	37	2	
14	50	16	\$ 65,000	White	Male	.	Ohio	0	0	50	56	43	1	
15	45	12	\$ 30,000	White	Male	.	Ohio	2	0	45	44	39	1	
16	50	16	\$ 306,731	White	Male	.	Ohio	1	0	50	37	43	1	
17	50	11	\$ 37,000	White	Male	\$ 643	Ohio	4	643	50	45	37	1	
18	40	12	\$ 34,000	White	Male	\$ 600	Ohio	4	600	40	51	39	1	
19	40	13	\$ 25,000	White	Male	\$ 520	Ohio	4	520	40	28	40	1	
20	40	12	\$ 42,000	White	Male	\$ 680	Ohio	8	680	40	44	39	1	
21	40	16	\$ 68,000	White	Male	.	Ohio	6	0	40	43	43	1	
22	50	13	\$ 70,000	White	Male	.	Ohio	6	0	50	52	40	1	
23	40	12	\$ 25,000	White	Female	.	Ohio	7	0	40	59	39	1	
24	35	13	\$ 15,400	White	Female	.	Ohio	7	0	35	30	40	1	
25	40	13	\$ 56,426	White	Male	.	Ohio	7	0	40	50	40	1	



Now select only the elaborated data: columns for A to H and copy with right-click menu.

5	40	16	\$	48.200	White	Male	.	Ohio	7
6	38	12	\$	24.000	White	Male	.	Ohio	2
7	60	18	\$	62.000	White	Female	.	Ohio	5
8	40	13	\$	17.000	White	Female	.	Ohio	5
9	50	8	\$	25.000	Black	Male	.	Ohio	5
10	40	11	\$	10.000	Black	Male	.	Ohio	5
11	50	16	\$	65.000	White	Male	.	Ohio	7
12	45	12	\$	30.000	White	Male	.	Ohio	2
13	50	16	\$	306.731	White	Male	.	Ohio	1
14	50	11	\$	37.000	White	Male	\$ 643	Ohio	4
15	40	12	\$	34.000	White	Male	\$ 600	Ohio	4
16	40	13	\$	25.000	White	Male	\$ 520	Ohio	4
17	40	12	\$	42.000	White	Male	\$ 680	Ohio	8
18	40	16	\$	68.000	White	Male	.	Ohio	6
19	50	13	\$	70.000	White	Male	.	Ohio	6
20	40	12	\$	25.000	White	Female	.	Ohio	7
21	35	13	\$	15.400	White	Female	.	Ohio	7
22	40	13	\$	56.426	White	Male	.	Ohio	7
23	40	12	\$	21.087	White	Male	.	Ohio	7
24	40	13	\$	50.000	White	Male	.	Ohio	7
25	49	12	\$	11.500	Black	Female	\$ 173	Ohio	4
26	60	12	\$	40.000	White	Male	.	Ohio	5
27	60	18	\$	70.000	White	Female	.	Ohio	1

Topic_1_Exercise_3_Elaborated.xls

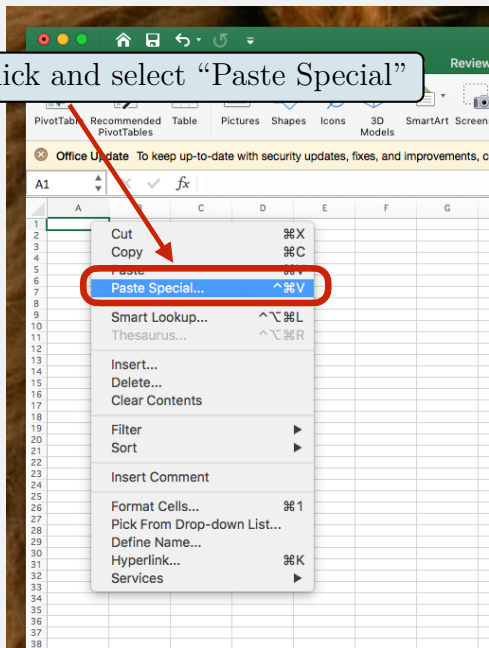
Office Update To keep up-to-date with security updates, fixes, and improvements, choose Check for Updates.

C1

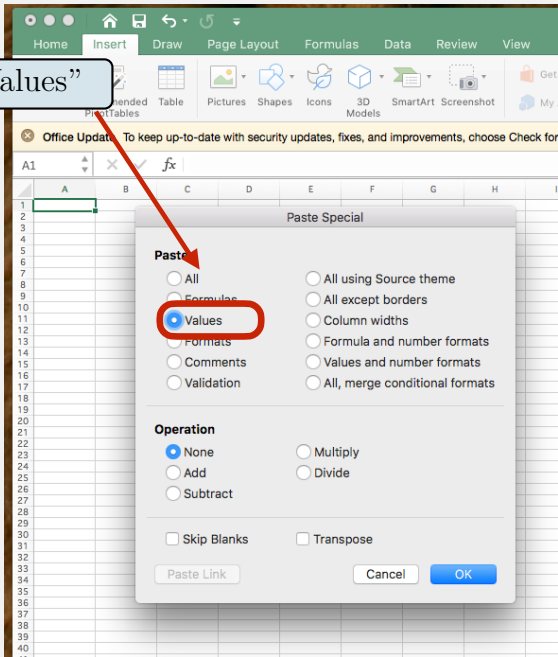
	A	B	C	D	E	F	G	H
	Usual Hours Worked	Education (yrs)				Usual Weekly Earnings	State	Month in Sample
1								
2	40	10	\$ 11.000	White	Male	\$ 858	Ohio	8
3	35	12	\$ 12.000	White	Female	.	Ohio	3
4	70	11	\$ 54.000	White	Male	.	Ohio	3
5	40	16	\$ 48.200	White	Male	.	Ohio	7
6	38	12	\$ 24.000	White	Male	.	Ohio	2
7	60	18	\$ 62.000	White	Female	.	Ohio	5
8	40	13	\$ 17.000	White	Female	.	Ohio	5
9	50	8	\$ 25.000	Black	Male	.	Ohio	5
10	40	11	\$ 10.000	Black	Male	.	Ohio	5
11	50	16	\$ 65.000	White	Male	.	Ohio	7
12	45	12	\$ 30.000	White	Male	.	Ohio	2
13	50	16	\$ 306.731	White	Male	.	Ohio	1
14	50	11	\$ 37.000	White	Male	\$ 643	Ohio	4
15	40	12	\$ 34.000	White	Male	\$ 600	Ohio	4
16	40	13	\$ 25.000	White	Male	\$ 520	Ohio	4
17	40	12	\$ 42.000	White	Male	\$ 680	Ohio	8
18	40	16	\$ 68.000	White	Male	.	Ohio	6
19	50	13	\$ 70.000	White	Male	.	Ohio	6
20	40	12	\$ 25.000	White	Female	.	Ohio	7
21	35	13	\$ 15.400	White	Female	.	Ohio	7
22	40	13	\$ 56.426	White	Male	.	Ohio	7
23	40	12	\$ 21.087	White	Male	.	Ohio	7
24	40	13	\$ 50.000	White	Male	.	Ohio	7
25	49	12	\$ 11.500	Black	Female	\$ 173	Ohio	4
26	60	12	\$ 40.000	White	Male	.	Ohio	5
27	60	18	\$ 70.000	White	Female	.	Ohio	1

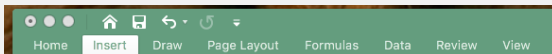
Intro Data Data and Pivot Codebook Grouping Summary Stats Tables G&A +

Now right-click and select “Paste Special”

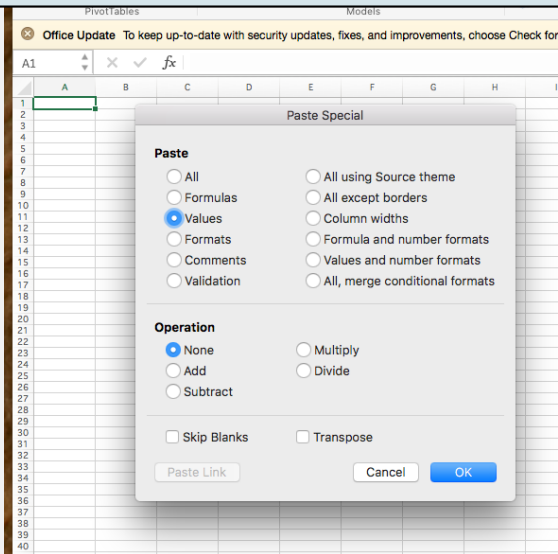


Select "Values"





This would avoid copy and paste of the formulas!!



	A	B	C	D	E	F	G	H
1	Usual Hours W	Education (yrs)				Usual Weekly	State	Month in Sample
2	40	1				858	Ohio	8
3	35	12	12000	White	Female	.	Ohio	3
4	70	11	54000	White	Male	.	Ohio	3
5	40	16	48200	White	Male	.	Ohio	7
6	38	12	24000	White	Male	.	Ohio	2
7	60	18	62000	White	Female	.	Ohio	5
8	40	13	17000	White	Female	.	Ohio	5
9	50	8	25000	Black	Male	.	Ohio	5
10	40	11	10000	Black	Male	.	Ohio	5
11	50	16	65000	White	Male	.	Ohio	7
12	45	12	30000	White	Male	.	Ohio	2
13	50	16	306731	White	Male	.	Ohio	1
14	50	11	37000	White	Male	643	Ohio	4
15	40	12	34000	White	Male	600	Ohio	4
16	40	13	25000	White	Male	520	Ohio	4
17	40	12	42000	White	Male	680	Ohio	8
18	40	16	68000	White	Male	.	Ohio	6
19	50	13	70000	White	Male	.	Ohio	6
20	40	12	25000	White	Female	.	Ohio	7
21	35	13	15400	White	Female	.	Ohio	7
22	40	13	56426	White	Male	.	Ohio	7
23	40	12	21087	White	Male	.	Ohio	7

We need a table ...

	A	B		G	H
1	Usual Hours Worked	Education (yrs)		Weekly Income	State
2	40	11	18000 White	858 Ohio	8
3	35	11	18000 White	Ohio	3
4	70	11	18000 White	Ohio	3
5	40	16	48200 White	Male	7
6	38	12	24000 White	Male	2
7	60	18	62000 White	Female	5
8	40	13	17000 White	Female	5
9	50	8	25000 Black	Male	5
10	40	11	10000 Black	Male	5
11	50	16	65000 White	Male	7
12	45	12	30000 White	Male	2
13	50	16	306731 White	Male	1
14	50	11	37000 White	Male	4
15	40	12	34000 White	Male	4
16	40	13	25000 White	Male	4
17	40	12	42000 White	Male	8
18	40	16	68000 White	Male	6
19	50	13	70000 White	Male	6
20	40	12	25000 White	Female	7

Select "Insert" tab and
then "Table"

Home Insert Draw Page Layout Formulas Data Review View

PivotTable Recommended PivotTables Table Pictures Shapes Icons 3D Models SmartArt Screenshot Get Add-Ins My Add-Ins Bing Maps People Graph Recommended Charts PivotChart Sparklines Slicer Timeline Link Text Box Header & Footer

Office Update To keep up-to-date with security updates, fixes, and improvements, choose Check for Updates.

A1 X Usual Hours Worked

XLS automatically
recognises the range.

				E	F	G	H
1	Usual			Sex	Usual Weekly	State	Month in Sample
2				Male	858	0	8
3				Female	.		3
4				Male	.	0	3
5	40	16	48200	Male	.	0	7
6	38	12	24000	Male	.	0	2
7	60	18	62000	Female	.	0	5
8	40	13	17000	Female	.	0	5
9	50	8	25000	Male	.	Ohio	5
10	40	11	10000	Male	.	Ohio	5
11	50	16	65000	Male	.	Ohio	7
12	45	12	30000	Male	.	Ohio	2
13	50	16	306731	Male	.	Ohio	1
14	50	11	37000	Male	643	Ohio	4
15	40	12	34000	Male	600	Ohio	4
16	40	13	25000	Male	520	Ohio	4
17	40	12	42000	Male	680	Ohio	8
18	40	16	68000	Male	.	Ohio	6
19	50	13	70000	Male	.	Ohio	6
20	40	12	25000	Female	.	Ohio	7

Create Table

Where is the data for your table?

=A\$1:\$H\$6367

☒ My table has headers

Cancel

OK

PivotTable Fields

- ☐ Usual Hours Worked
- ☐ Education (yrs)

Create the following pivot table

- ☐ Usual Weekly Earnings
- ☒ State
- ☐ Month in Sample

Filters

Columns

Ethnic group

Rows

Values

State

Average of yearly
earnings

Drop Report Filter Fields Here

Too many digits!

Average of

State	AsianPI	Black	IndEsk	White	Grand Total
Illinois	42518,72727	28027,01163	40222,22222	38526,33008	37327,69671
Indiana	92500	29607,80645	39457,14286	33133,98032	33124,47659
Michigan	49834,85714	29419,88344	32448,15385	40412,75875	39317,01679
Ohio	47646,08333	29522,30709	47000	40839,21538	40051,05174
Wisconsin	30121,5	17680	25800	35280,57239	34497,25714
Grand Total	44921,41379	28405,68937	36237,52632	38667,00446	37796,10902

Σ Values

Click on information



PivotTable Field

Source field: Yearly Earnings

Field name: Average of Yearly Earnings

Summarize by

Show data as

Sum

Count

Average

Max

Min

Product

Count Numbers

StdDev

Number...

Cancel

OK

Σ Values

: Average of Yearly Earnings

PivotTable Field

Source field: Yearly Earnings

Field name: Average of Yearly Earnings

Summarize by

Show data as

Sum

Count

Average

Max

Product

Count Numbers

StdDev

Then on Number....

Number...

Cancel

OK

Format Cells

Number

Category:

General

Number

Currency

Accounting

Date

Time

Percentage

Fraction

Scientific

Text

Special

Custom

Sample

38667,00446

General format cells have no specific number format.

Then on Number, again!

Cancel

OK

Format Cells

Number

Category:

General

Number

Currency

Accounting

Date

Time

Percentage

Fraction

Scientific

Text

Special

Custom

Sample

38667,00

Decimal places: 2

☐ Use 1000 Separator (,)

Negative numbers:

-1234,10

1234,10

-1234,10

-1234,10

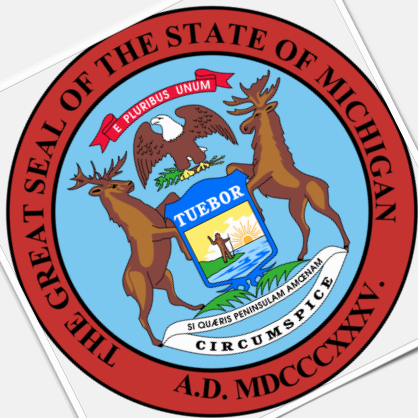
Choose 2 digits.

Number is used for general display of numbers. Currency and Accounting offer specialized formatting for monetary value.

Cancel

OK

Which is the
average Yearly Earnings gender gap
for the white group in the state of Michigan?



 Filters

 Columns

 Sex

 Rows

 Ethnic Group

 State

 Values

 Average of Yearly...

Drag fields between areas

Pivot Table Field

Source field: Yearly Earnings

Field name: Average of Yearly Earnings

Summarise by

Show data as

Difference From



Base field:

Usual Hours W...
Education (yrs)
Yearly Earnings
Ethnic Group
Sex

Base item:

(previous)
(next)
Female
Male

Number...

Cancel

OK

Average of Yearly Earnings		Column Labels	
Row Labels	Female	Male	Grand Total
AsianPI		18286,41502	
Illinois		4717,724185	
Indiana		92500	
Michigan		43267,55556	
Ohio		17869,28889	
Wisconsin		19127,73333	
Black		7808,69898	
Illinois		7154,114463	
Indiana		15928,90171	
Michigan		9828,118721	
Ohio		6256,170738	
Wisconsin		-4676,666667	
IndEsk		21586,0202	
Illinois		26642,85714	
Indiana		19200	
Michigan		15358,83333	
Ohio		24000	
Wisconsin		32750	
White		16582,94326	
Illinois		15885,6948	
Indiana		12431,78064	
Michigan		18800,04027	
Ohio		16696,61883	
Wisconsin		17020,10542	
Grand Total		16241,90826	

Average of Yearly Earnings

Column Labels

Row Labels	Female	Male	Grand Total
------------	--------	------	-------------

AsianPI		18286,41502	
---------	--	-------------	--

Illinois		4717,724185	
----------	--	-------------	--

Indiana		92500	
---------	--	-------	--

Michigan		43267,55556	
----------	--	-------------	--

Ohio		17869,28889	
------	--	-------------	--

Wisconsin		19127,73333	
-----------	--	-------------	--

Black		7808,69898	
-------	--	------------	--

Illinois		7154,114463	
----------	--	-------------	--

Indiana		15928,90171	
---------	--	-------------	--

Michigan		9828,118721	
----------	--	-------------	--

Ohio			
------	--	--	--

Wisconsin			
-----------	--	--	--

White		21586,0202	
-------	--	------------	--

Illinois		26642,85714	
----------	--	-------------	--

Indiana		19200	
---------	--	-------	--

Michigan		15358,83333	
----------	--	-------------	--

Ohio		24000	
------	--	-------	--

Wisconsin		32750	
-----------	--	-------	--

White		16582,94326	
-------	--	-------------	--

Illinois		15885,6948	
----------	--	------------	--

Indiana		12431,78064	
---------	--	-------------	--

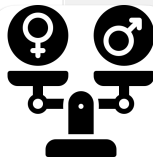
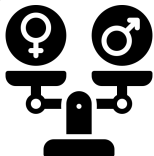
Michigan		18800,04027	
----------	--	-------------	--

Ohio		16696,61883	
------	--	-------------	--

Wisconsin		17020,10542	
-----------	--	-------------	--

Grand Total		16241,90826	
-------------	--	-------------	--

Gender Gap = 18800,04\$



Which is the average Usual Weekly Earnings of Asian people in Indiana?



Which is the average Usual Weekly Earnings of Asian people in Indiana?



FIELD NAME

- ☐ Usual Hours Worked
- ☐ Education (yrs)
- ☐ Yearly Earnings
- ☒ Race
- ☐ Sex
- ☒ Usual Weekly Earnings
- ☒ State
- ☐ Month in Sample

Filters

Columns

Rows

State

Values

Average of Usual Weekly Earnings

Ethnic group

State

Average of Usual Weekly Earnings

Double click to see how the data is created

Drop Report Filter Fields Here					
Average of	AsianPI	Black	IndEsk	White	Grand Total
Illinois	817,9090909	673,0847458	725	776,9289617	763,8215103
Indiana	#DIV/0!	637,0909091	320	672,1395349	666,9078014
Michigan	807,5	524,7073171	505,25	783,8421053	748,626506
Ohio	696	645,0769231	#DIV/0!	742,4871795	733,765043
Wisconsin	767	338,6666667	398	668,3333333	651,3741497
Grand Total	761,8148148	608,6503497	473,3333333	746,8117359	731,2972973

It's not possible to compute the average because data are corrupted!

					F	G	H
					Usual Weekly Earnings	State	Month in Sample
55	12	47000	IndEsk	Male	.	Ohio	5
40	18	60000	IndEsk	Male	.	Ohio	1
51	13	52000	IndEsk	Male	.	Ohio	7
40	13	29000	IndEsk	Female	.	Ohio	1

FIELD NAME

Search fields

☐ Usual Hours Worked

☐ Education (yrs)

☐ Yearly Earnings

Add usual weekly earnings to the Filters

☐ Sex

☒ Usual Weekly Earnings

☒ State

☐ Month in Sample

Filters

Usual Weekly Ear... 

Usual Weekly Earnings	(All)
Average of Usual Weekly Earnings	Race
State	AsianPI
Illinois	817,9090909
Indiana	#DIV/0!
Michigan	807,5
Ohio	696
Wisconsin	767
Grand Total	761,8148148

Usual Weekly Earnings

Search

☒ 2500
☒ 2577
☒ 2596
☒ 2615
☒ 2692
☒ 2884
☒ 2885
☒ .

Clear Filter

dE

47

Usual Weekly Earnings	(All)
Average of Usual Weekly Earnings	Race
State	AsianPI
Illinois	817,9090909
Indiana	#DIV/0!
Michigan	807,5
Ohio	696
Wisconsin	767
Grand Total	761,8148148

Usual Weekly Earnings

Search

- ☒ 2500
- ☒ 2577
- ☒ 2596
- ☒ 2615
- ☒ 2692
- ☒ 2884
- ☒ 2885
- ☒ .

Clear Filter

Deselect the corrupted value

Now empty fields signal that the data are absent

Usual Week						
Average of						
State	AsianPl	Black	IndEsk	White	Grand Total	
Illinois	817,9090909	673,0847458	725	776,9289617	763,8215103	
Indiana		637,0909091	320	672,1395349	666,9078014	
Michigan	807,5	524,7073171	505,25	783,8421053	748,626506	
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Grand Total	761,8148148	608,6503497	473,3333333	746,8117359	731,2972973	

Two exercises

Open the files:

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Airplane_crashes
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