winma+h
Career Infused Capstone Projects

Name

Home, Sweet Home

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Question 1

    a) Write the valuation equation and tax bill equation you developed for question 5 on both the Valuation and Taxes Worksheets. Define the variables used in your equations.

    b) Explain how you developed the valuation and tax bill equations.

Question 2

Explain how you know the equations you developed are functions. Why is it important to use functions for valuations and tax bills?

Question 3

    a)   What does the slope of a line or the value of m in the equation $y = mx + b$ represent?

    b)   Compare the slope of the line you graphed on the Valuation Worksheet and the value of m from the equation you developed in #5 of the Taxes Worksheet.

- Is the function linear or non-linear?
- Is the function increasing or decreasing?
- Which function shows a greater rate of change?

    c)   What rate does m represent in the valuation and tax bill equations?
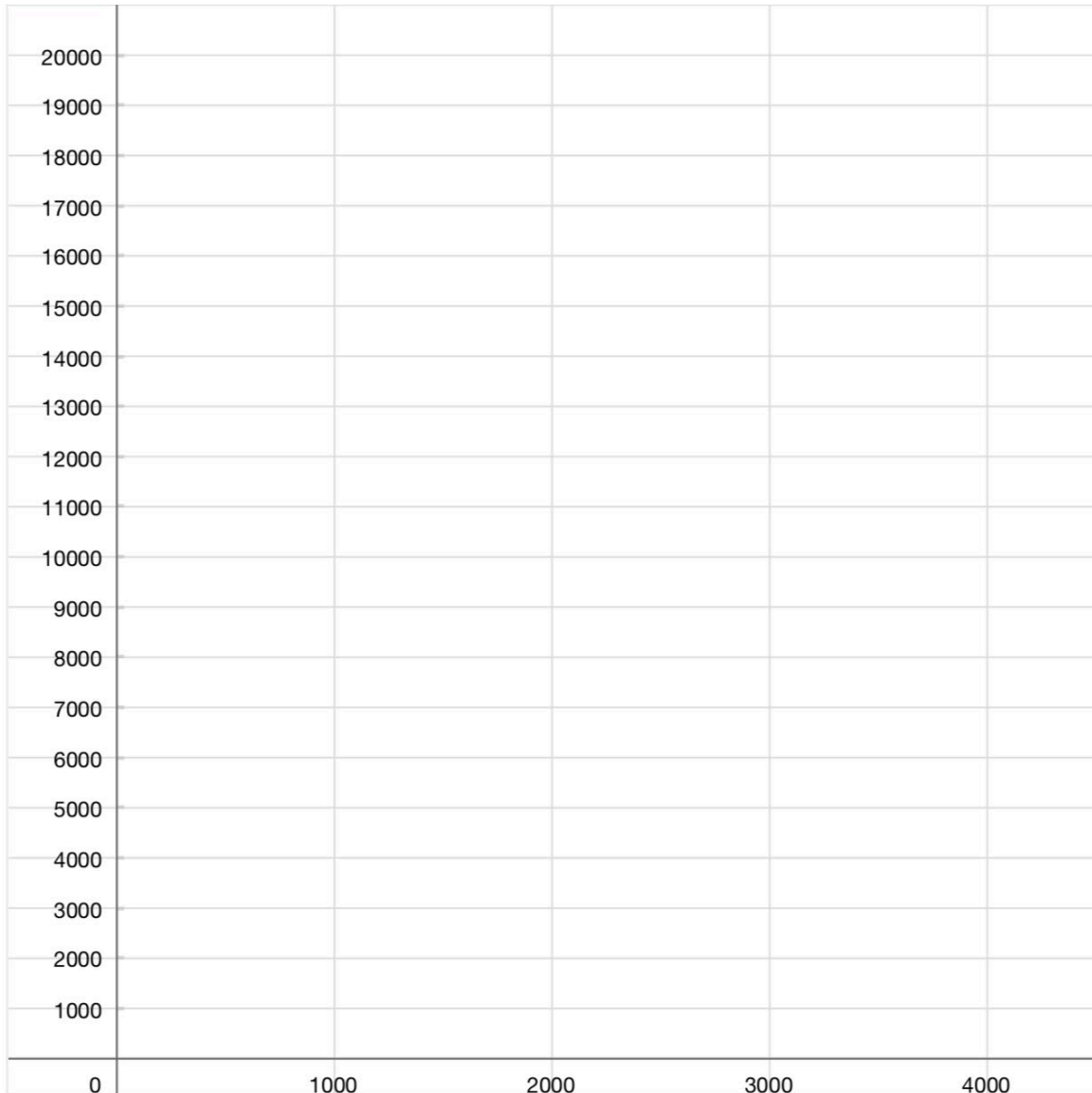
Question 4

    a)   Write the tax prediction equation you developed for question 7 on the Taxes Worksheet. Explain what each variable represents.

    b)   Explain how you found the tax prediction equation.

Question 5

This question relates to Community 1. If your equations are for Community 2, skip to the next question.

a) Graph the tax bill prediction equation for Community 1. Round y-values to the nearest thousand. (To make a graph of a line, draw two points that are on the line.)

20000				
19000				
18000				
17000				
16000				
15000				
14000				
13000				
12000				
11000				
10000				
9000				
8000				
7000				
6000				
5000				
4000				
3000				
2000				
1000				
0	1000	2000	3000	4000

b) Explain to the city council how you found the values to create the graph. In your explanation, include the exact coordinates for 2 points on the graph.

Question 6

This question relates to Community 2. if your equations are for Community 1, skip to the next question.

a) Graph the tax bill prediction equation for Community 2. Round y-values to the nearest hundred. (To make a graph of a line, draw two points that are on the line.)

b) Explain to the city council how you found the values to create the graph. In your explanation, include the exact coordinates for two points on the graph.

Question 7

a) What rate is represented by the slope of your tax bill prediction equation?

b) Explain how the community can use your tax bill prediction equation to forecast tax income for future budget planning.

Question 8

a) Review the Property Information table and determine how much total revenue your chosen community collected in property taxes from the 17 properties in 2013, 2012 and 2011.

b) How much total revenue will the community collect from the 17 properties in 2014?

c) Based on the 2013 budget, the cost of an employee's salary and the 2014 taxes collected from the 17 properties, did the community have enough funds to hire a new employee in 2014? If yes, how many employees? If no, how much more was needed to hire a full-time employee?

Community #1 Data

Property	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Type	Colonial	Colonial	Colonial	Colonial	Colonial	Conventional	Conventional	Cape Cod	Cape Cod	Ranch	Ranch	Ranch	Bungalow	Bungalow	Bungalow	Bungalow	Bungalow
Sale Price (in $1,000)	$729	$854	$1850	$689	$1410	$1135	$651	$811	$625	$394	$680	$609	$680	$200	$150	$309	$255
Living Sq feet	2000	2100	3700	2100	3700	3400	2388	2100	2300	1400	1900	1400	2200	900	600	900	900
Total Sq feet	4100	3400	6000	3484	8000	4700	3090	3400	3600	2900	5000	2620	4800	1900	1400	2100	2400
Bedrooms	4	4	5	4	4	4	3	4	3	3	3	3	3	1	1	3	2
Baths	2.5	2.5	4	2.5	3.5	2.5	3	2.5	2	1.5	3.5	2	2	1	1	2	1
Total Rooms	8	8	10	8	9	10	8	8	7	5	8	6	8	3	3	5	5
Fireplace	3	1	1	1	4	3	2	1	1	1	1	1	1	0	0	1	1
Deck/Balcony	Y	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Porch	Y	N	Y	N	Y	Y	Y	Y	N	Y	Y	N	Y	N	Y	N	Y
Central AC	Y	N	Y	N	Y	Y	N	N	N	N	Y	N	Y	N	N	N	N
Garage	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	N	N	Y
Pool	N	N	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N
Land (acres)	0.5	0.3	0.23	0.82	1.52	0.22	0.28	1.41	0.61	0.3	0.46	0.52	1.14	0.36	0.17	0.2	0.13
2013 Valuation (in $1,000)	$674	$664	$1731	$656	$1417	$681	$577	$575	$524	$395	$542	$543	$512	$280	$224	$358	$335
2013 Tax bill	$8300	$8200	$21,000	$8000	$17,500	$8400	$7500	$7000	$6000	$5400	$6700	$6700	$6300	$3500	$2800	$4400	$4500
2012 Valuation (in $1,000)	$562	$664	$1685	$656	$1417	$681	$577	$575	$524	$395	$542	$543	$512	$280	$224	$358	$335
2012 Tax bill	$6685	$7896	$20,030	$7802	$16,851	$8101	$6864	$6838	$6235	$4694	$6447	$6461	$6090	$3330	$2657	$4251	$3988
2011 Valuation (in $1,000)	$567	$667	$1673	$664	$1591	$684	$579	$639	$562	$371	$605	$475	$547	$197	$180	$351	$345
2011 Tax bill	$6285	$7391	$18,540	$7352	$17,626	$7575	$6411	$7079	$6227	$4110	$6702	$5261	$6056	$2181	$1990	$3890	$3827

Community #2 Data

Property	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Type	Art Deco	Art Deco	Art Deco	Contemporary	Contemporary	Townhome	Townhome	Mediterranean	Mediterranean	Pueblo Revival	Pueblo Revival	Pueblo Revival	Pueblo Revival	Spanish	Spanish	Spanish	Spanish
Sale Price (in $1,000)	$184	$499	$450	$630	$429	$310	$440	$619	$229	$270	$600	$205	$340	$525	$530	$415	$396
Living Sq feet	1600	3300	3300	3300	3700	2100	2400	3500	1800	2100	2500	1800	2500	2800	3500	2700	3000
Total Sq feet	2500	4200	4500	4400	5100	3000	3500	5200	2300	3000	4200	3100	3300	4100	5600	3900	4800
Bedrooms	2	5	3	3	2	2	2	3	2	3	3	2	2	3	4	2	3
Baths	2	3.5	3	4	2	2	3	3	2	3	4	2	3	3	4	3	3
Total Rooms	7	9	8	9	5	5	6	8	4	8	10	5	5	8	10	5	9
Fireplace	Y	N	Y	N	Y	Y	N	N	Y	Y	N	Y	Y	N	Y	N	Y
Deck/Balcony	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Porch	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Central AC	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Garage	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Pool	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Land (acres)	13553	1.15	0.48	1.2	0.39	0	0	0.38	0.7	0.32	0.61	0.25	0.29	0.46	0.7	0.34	0.24
2013 Valuation (in $1,000)	$188	$313	$309	$365	$259	$210	$315	$460	$166	$205	$320	$245	$342	$367	$317	$339	$279
2013 Tax bill	$1566	$2551	$2575	$3025	$2128	$1691	$2544	$3618	$1342	$1679	$2590	$1791	$2807	$3052	$2632	$2783	$2199
2012 Valuation (in $1,000)	$192	$271	$315	$367	$240	$210	$315	$470	$175	$205	$325	$223	$320	$370	$323	$337	$279
2012 Tax bill	$1460	$2070	$2399	$2799	$1718	$1576	$2410	$3374	$1254	$1565	$2447	$1670	$2607	$2845	$2446	$2577	$2043
2011 Valuation (in $1,000)	$236	$348	$300	$378	$300	$230	$349	$451	$200	$216	$352	$219	$300	$351	$318	$349	$250
2011 Tax bill	$1623	$2398	$2069	$2603	$2010	$1520	$2327	$3179	$1380	$1492	$2364	$1472	$2068	$2493	$2152	$2408	$1689