HOME, SWEET HOME

Taxes: Community #2

Use the data provided online for Community #2 to answer the following questions.

1. Plot the 2013 Property Valuation and 2013 Tax Bill for the selected community on the coordinate plane on page 2.

2. Draw the line of best fit.

3. Use the formula for slope to determine the slope (m) of the line to the hundredths place.

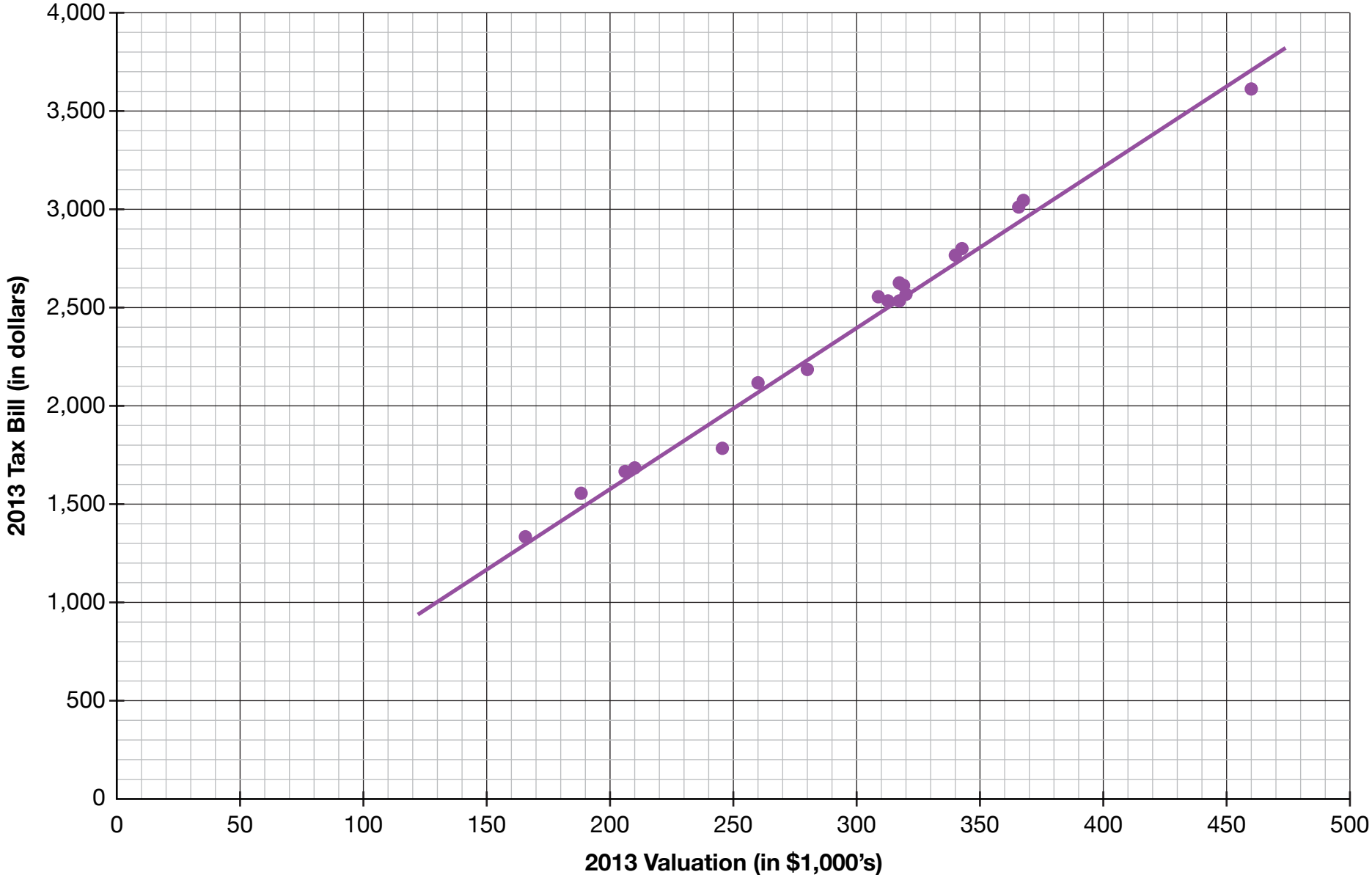
Student should identify 2 points and use slope formula correctly. Slope should be around 8.13.

4. Determine the y-intercept (b) of the line to the nearest integer.

Student should use slope and an x value to find the b value in $y = mx + b$. y-intercept should be approximately –5.

5. Use the slope and y-intercept to write a formula representing the relationship between 2013 Property Valuation and 2013 Tax Bill in slope-intercept format, $y = mx + b$. Define the variables you use in the formula. This is your tax bill formula.

Using the data and least squares method to determine the equation of the line of best fit, the equation is $y = 8.13x - 5$ where x is the 2013 Property Valuation and y is the 2013 Tax Bill. *Students are not expected to get this exact value.*



6. If the tax rate remains the same for 2014 and the properties sell for the sale prices, how much will the tax bill be for each property? Calculate the bills to the nearest penny. Use the tables below to organize your data and use the space provided to show your calculations.

Property	A	B	C	D
Sale Price (in $1,000)	$184	$499	$450	$630
2014 Estimated Tax Bill	$1,490.92	$4,051.87	$3,653.50	$5,116.90

Property	E	F	G	H
Sale Price (in $1,000)	$429	$310	$440	$619
2014 Estimated Tax Bill	$3,482.77	$2,515.30	$3,572.20	$5,027.47

Property	I	J	K	L
Sale Price (in $1,000)	$229	$270	$600	$205
2014 Estimated Tax Bill	$1,856.77	$2,190.10	$4,873.00	$1,661.65

Property	M	N	O	P
Sale Price (in $1,000)	$340	$525	$530	$415
2014 Estimated Tax Bill	$2,759.20	$4,263.25	$4,303.90	$3,368.95

Property	Q
Sale Price (in $1,000)	$396
2014 Estimated Tax Bill	$3,214.48

Substituted sale price for x in $y = 8.13x - 5$ for each property

7. Combine the valuation formula and the tax bill formula to create a single formula that will predict the tax bill for a property. Include only the living area square footage (no pool). Define the variables you use in the formula. This is your tax prediction formula.

$y = 0.17x - 38$
where x represents the square footage and y represents the valuation

$y = 8.13x - 5$
where x represents the 2013 valuation and y represents the 2013 Tax Bill

$y = 8.13(0.17x - 38) - 5$

$y = 1.3821x - 308.94 - 5$

$y = 1.3821x - 313.94$
where y represents the 2013 Tax Bill and x represents the living area

