

Section 3.5 Residuals \Rightarrow How accurate is my prediction?

Write a line of fit for the Data

$$\hat{y} = 1.5x + -2.83$$

X	y	A y	Residual $y - \hat{y}$
1	2	-1.33	-0.67
2	1	0.17	0.83
3	2	1.67	0.33
4	5	3.17	1.83
5	3	4.67	-1.67
6	5	6.17	-1.17
7	9	7.67	1.33

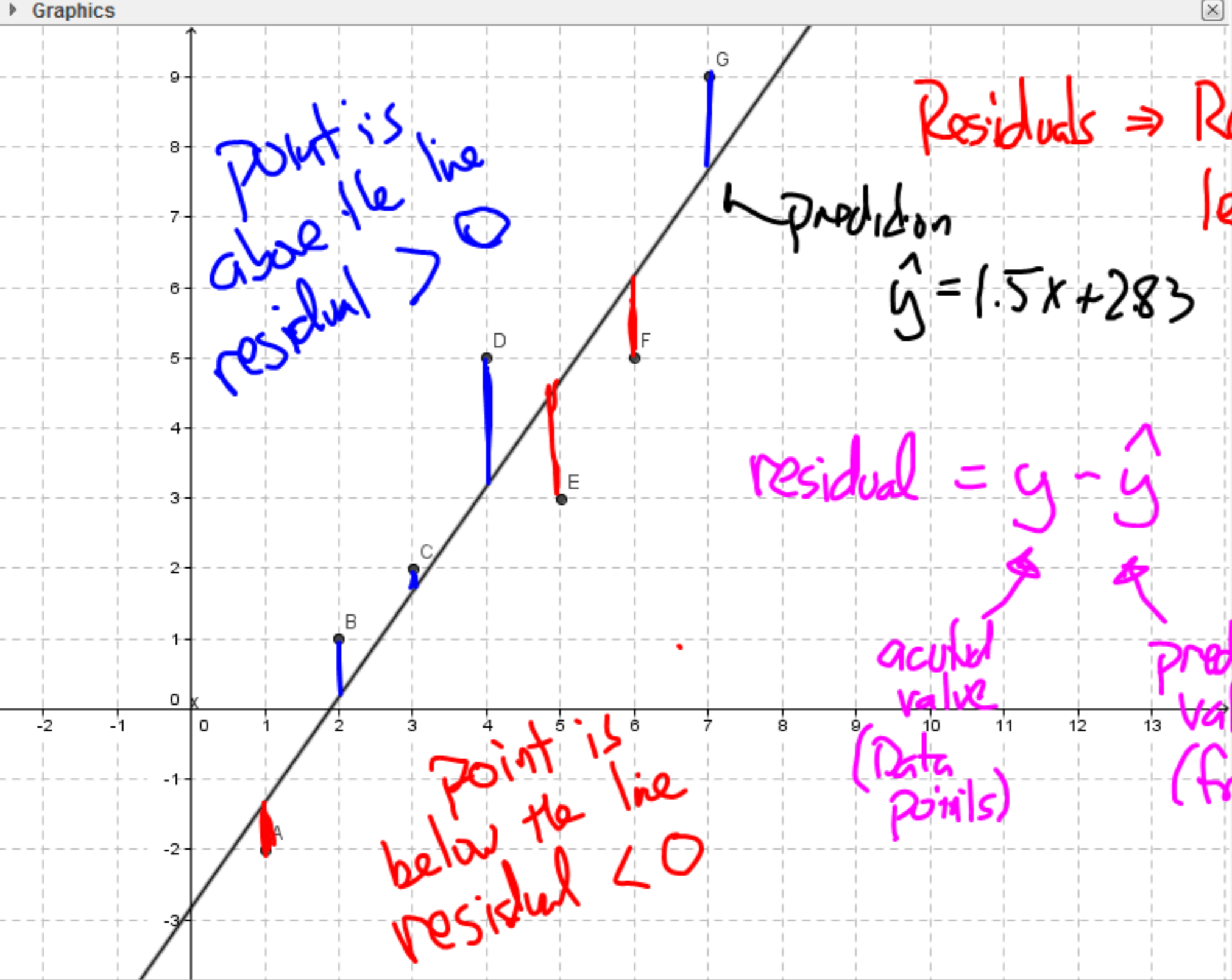
positive 1.83 biggest error

neg -1.67 biggest error

all of my predictions are within 1.83 units of the data

$$y = \hat{y} \pm 1.83$$

actual \rightarrow y
 \uparrow
 predicted \hat{y}
 max error or tolerance



	A	B	C
1	x	y	
2	1	-2	
3	2	1	
4	3	2	
5	4	5	
6	5	3	
7	6	5	
8	7	9	
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Section 3.5 Residuals \Rightarrow How accurate is my prediction?

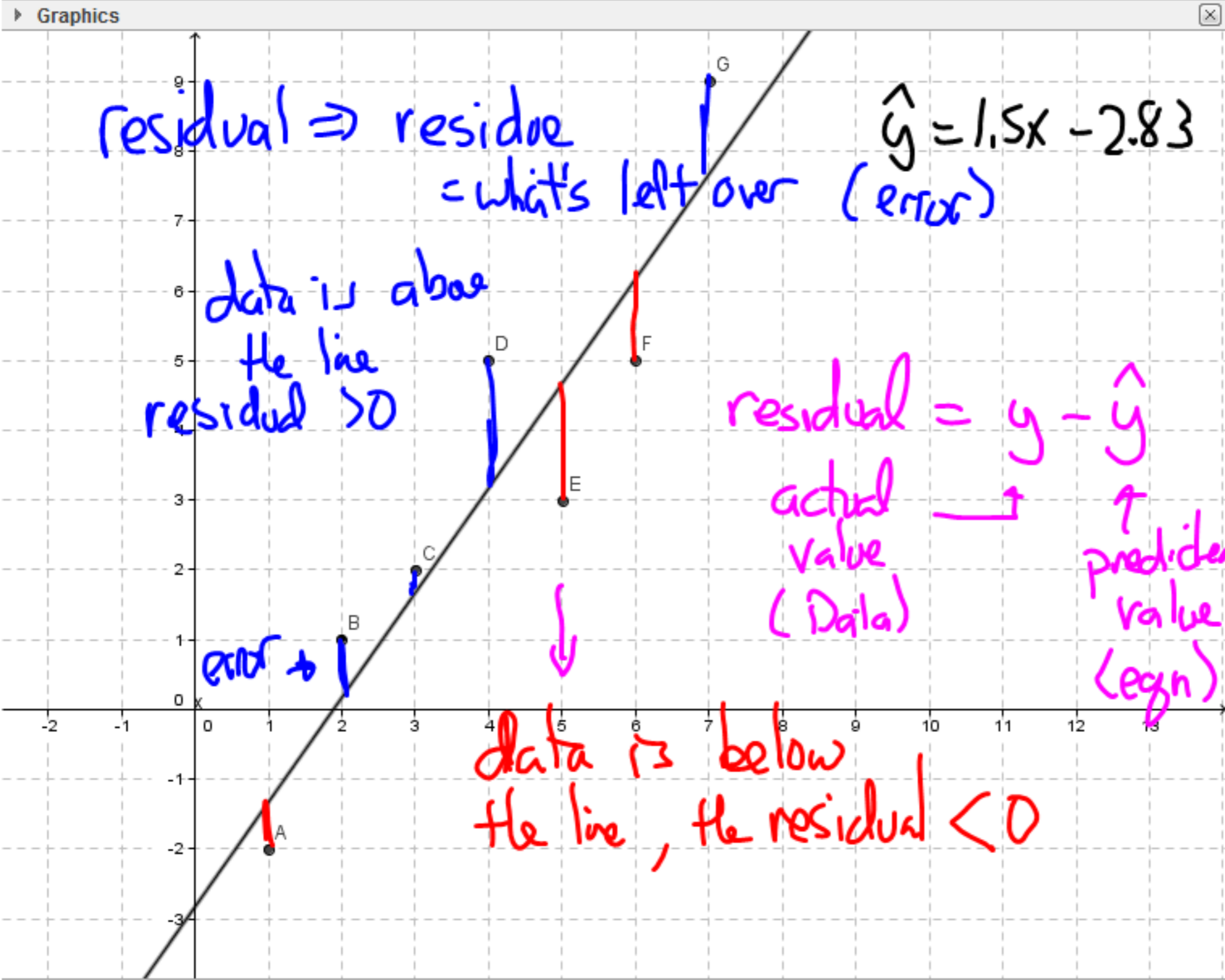
Write a line of fit for the Data

x	y	\hat{y}	Residuals $y - \hat{y}$
1	2	-1.33	-0.67
2	1	0.17	0.83
3	2	1.67	0.33
4	5	3.17	1.83
5	3	4.67	-1.67
6	5	6.17	-1.17
7	9	7.67	1.33

positive \Rightarrow worst is 1.83
or 1.83 above data

negative \Rightarrow worst is -1.67
or 1.67 below

$$y = \hat{y} \pm 1.83$$



	A	B	C
1	x	y	
2	1	-2	
3	2	1	
4	3	2	
5	4	5	
6	5	3	
7	6	5	
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Section 3.5 Residuals \Rightarrow How accurate is my prediction?

Write a line of fit for the Data

X	y	\hat{y}	residual $y - \hat{y}$
1	2	1.33	-0.67
2	1	0.17	0.83
3	2	1.67	0.33
4	5	3.17	1.83
5	3	4.67	-1.67
6	5	6.17	-1.17
7	9	7.67	1.33

$$\hat{y} = 1.5x - 2.83$$

$$1.5(1) - 2.83 = -1.33$$

positive residuals

1.83 "largest residual"

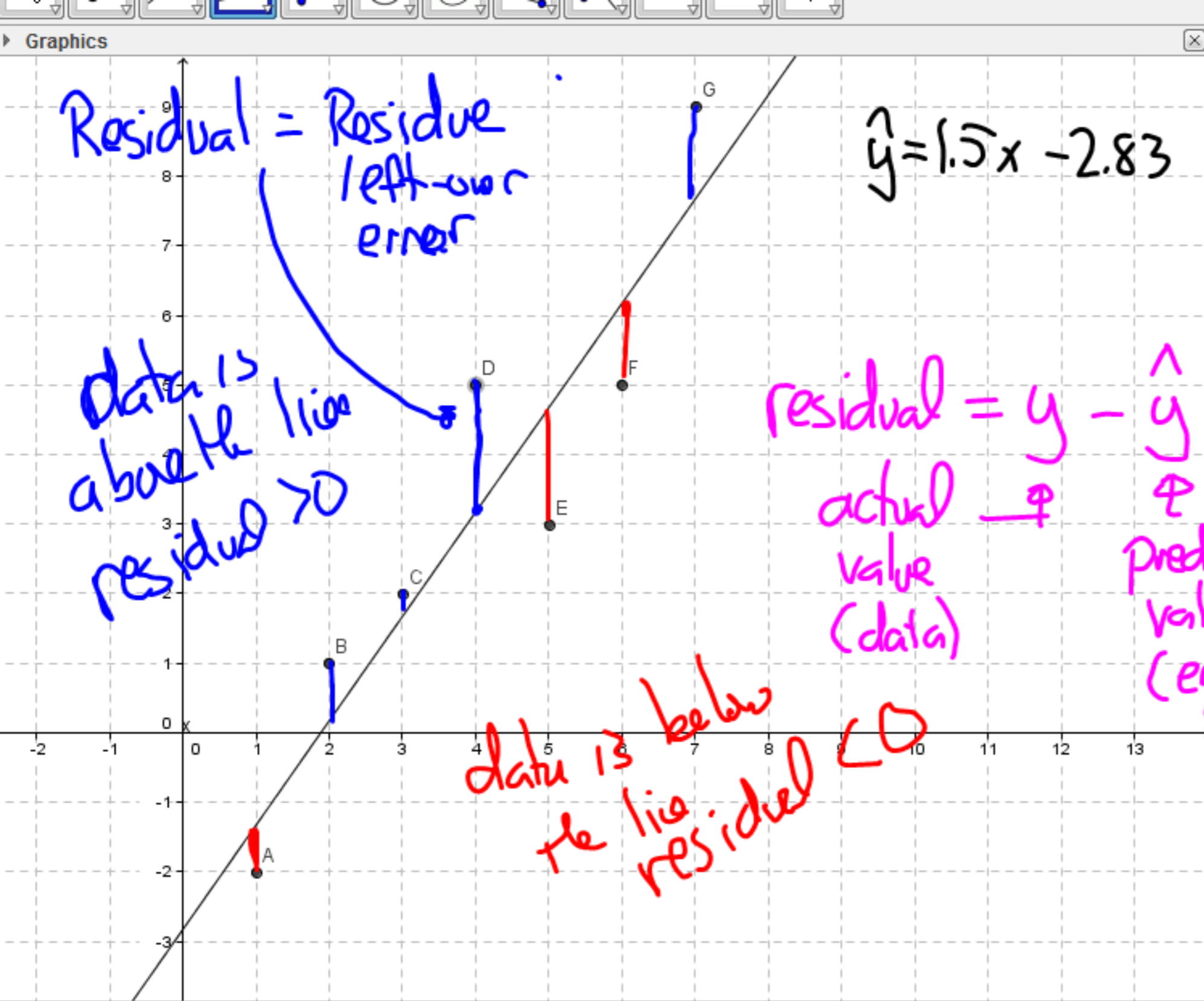
negative residuals

-1.67 "largest residual"

all of the data is within
1.83 units of the predicted
value

$$\text{actual } y = \hat{y} \pm 1.83$$

predicted
error or tolerance



	A	B	C
1	x	y	
2	1	-2	
3	2	1	
4	3	2	
5	4	5	
6	5	3	
7	6	5	
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