

QUIZ 2

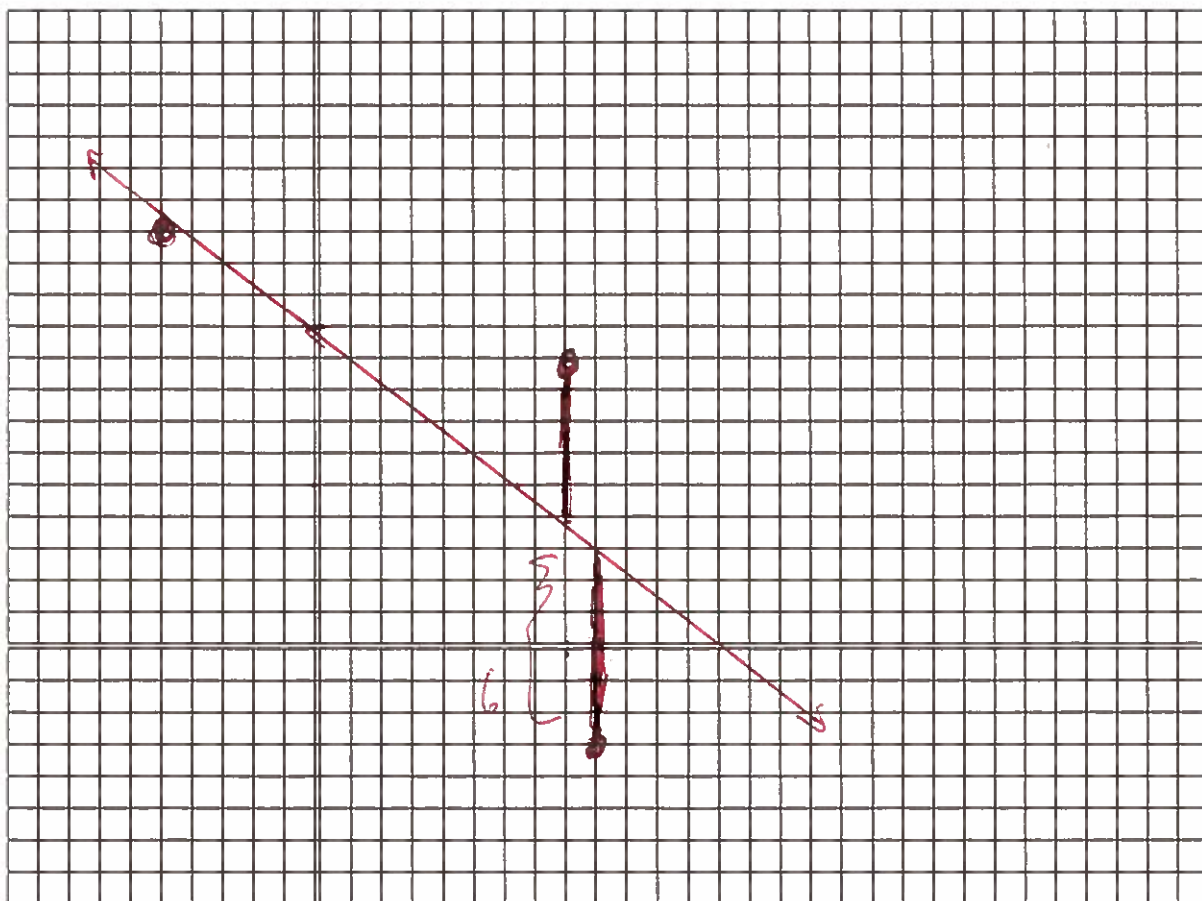
SOLUTION

MA 103, Instructor: Jeffrey Horn, Winter 2017

NAME: a

Instructions:

The table at the bottom of the page has your three data points: A,B,C. Find the best-fit linear regression line for these points by using *technology*! By *technology* I mean a graphing calculator, spreadsheet, Wolfram Alpha, etc. You may use the spreadsheet *BestFit.xlsx* developed for this class. Or go to www.wolframalpha.com and use "linear fit ((x1,y1),(x2,y2),(x3,y3))". (1) Fill in the blank fields in the table below with the values that the technology tool gives you. (2) Plot the three data points A,B,C on the graph below, and sketch the best fit line (or at least the portion that fits on the graph!). (3) Finally, draw the three "E bars" (the vertical lines connecting the data points to the best-fit line). (Use the given origin (the intersection of the double lines) or indicate a different point, if you choose a different origin.)



Data points:	A	B	C	
x =	8	9	-5	$m = -0.7869$
y =	9	-3	13	$b = 9.4809$
E =	5.8	-5.7	-0.415	Equation: $y = -0.79x + 9.5$
E ² =	33.8	29.15	0.17	$\sum E^2 = 63.1$

3 pts. each

1 pt.
 $y = -0.79x + 9.5$

132

QUIZ 2

Solution

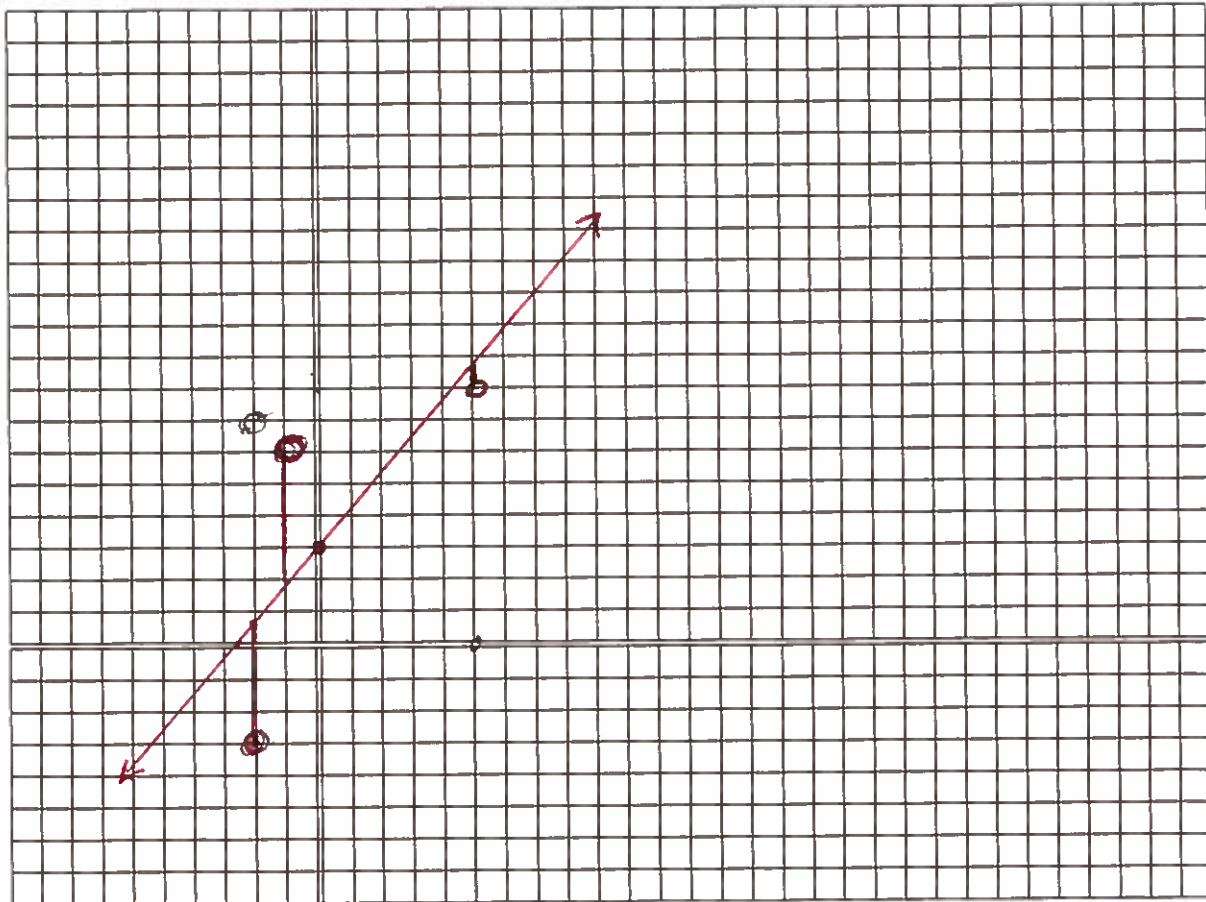
b

MA 103, Instructor: Jeffrey Horn, Winter 2017

NAME:

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4 pts.

Data points:	A	B	C	
x =	-1	-2	5	$m = 1.14$
y =	6	-3	8	$b = 2.91$
E =	4.23	-3.63	-0.6	Equation: $y = 1.14x + 2.91$
E ² =	18	13.2	0.366	$\sum E^2 = 31.4$

← 1 pt

3 pts each

QUIZ 2

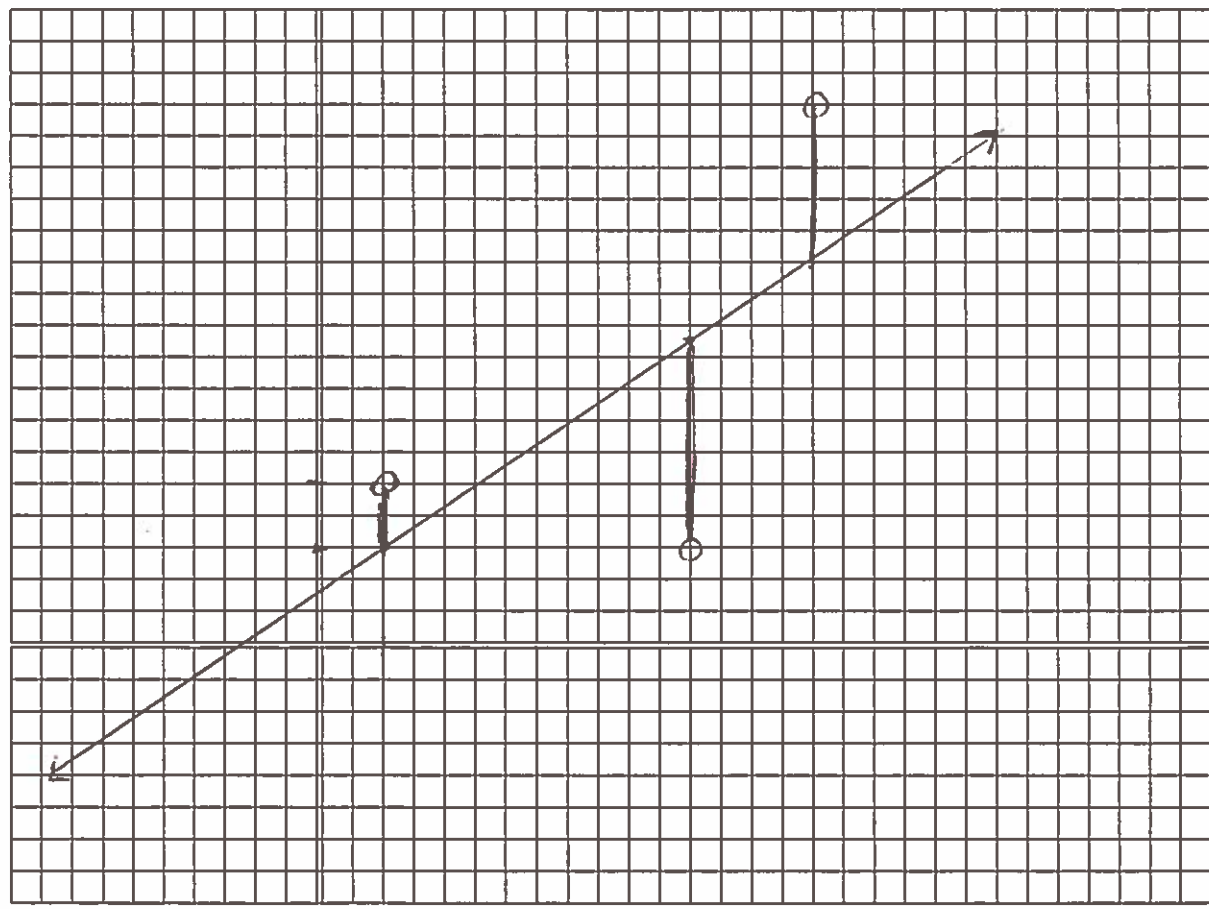
SOLUTION

MA 103, Instructor: Jeffrey Horn, Winter 2017

NAME: C

Instructions:

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4 pts

Data points:	A	B	C	
x =	2	12	16	$m = 0.654$
y =	5	3	17	$b = 1.8$
E =	1.9	-6.64	9.74	Equation: $y = 0.654x + 1.8$
E ² =	3.6	44.1	22.5	$\sum E^2 = 70$

← 1 pt

3 pts each

QUIZ 2

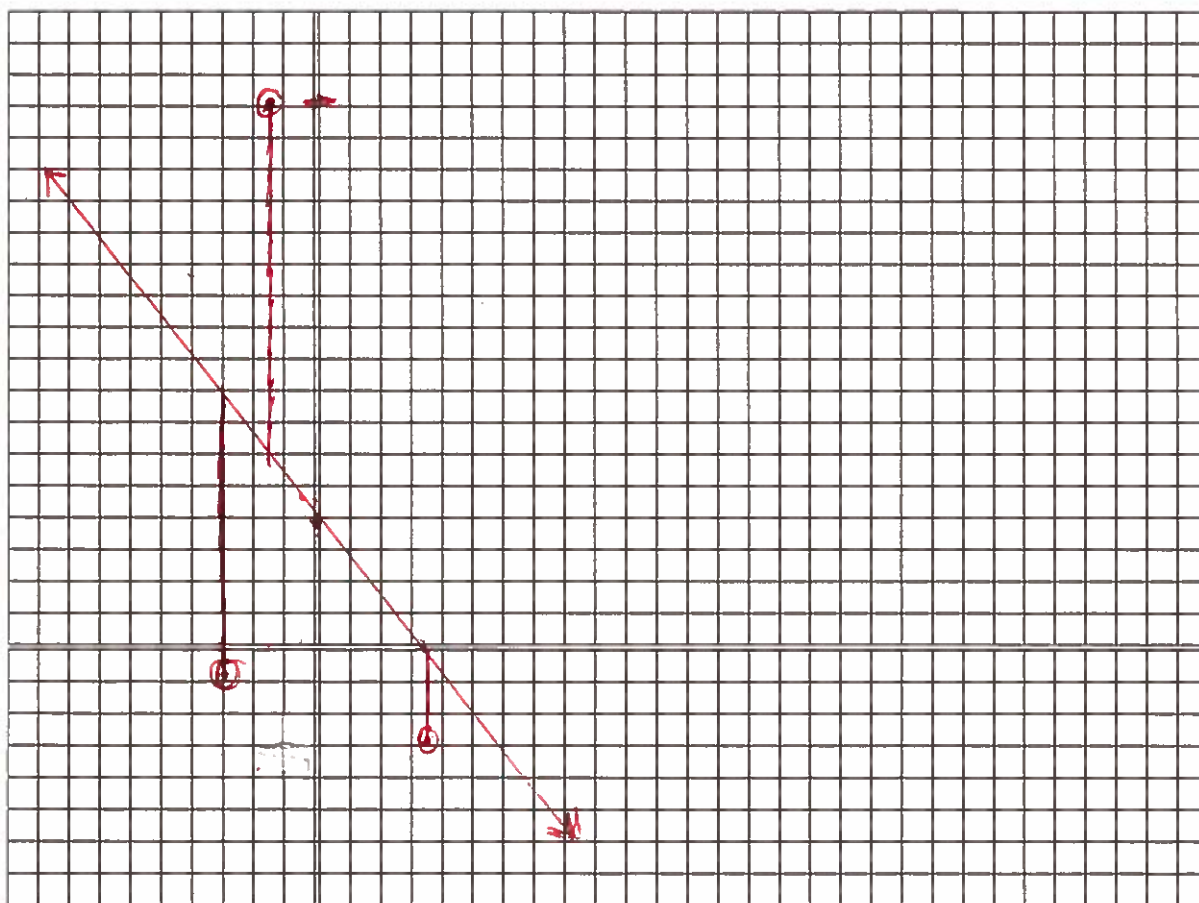
SOLUTION

MA 103, Instructor: Jeffrey Horn, Winter 2017

NAME: d

Instructions:

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4 pts

Data points:	A	B	C	
x =	-6	-3	7	$m = -1.24$
y =	-2	34	-6	$b = 7.84$
E =	-17.27	22.45	-5.18	Equation: $y = -1.24x + 7.84$ ← 1 pt.
E ² =	298	504	27	$\sum E^2 = 829$

3 pts each