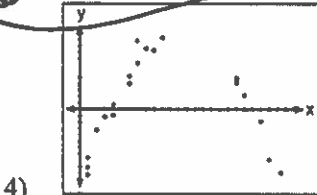
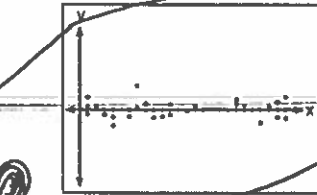
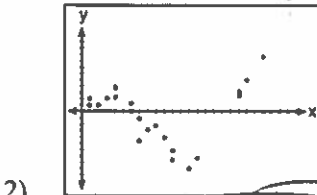
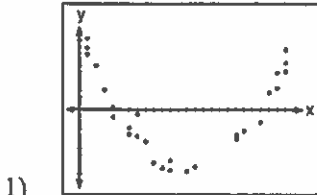


Name: KEY

**S.ID.B.6: Correlation Coefficient and Residuals**

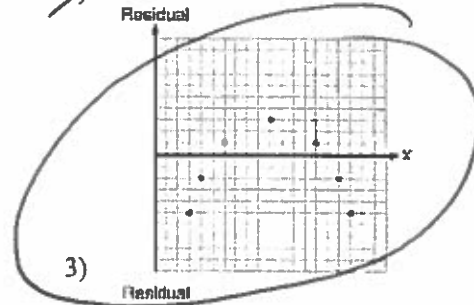
1 After performing analyses on a set of data, Jackie examined the scatter plot of the residual values for each analysis. Which scatter plot indicates the best linear fit for the data?



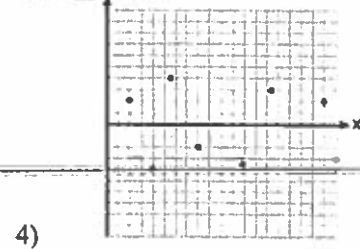
Scattered residuals mean best fit for data

2 Which statistic would indicate that a linear function would not be a good fit to model a data set?

- 1)  $r = -0.93$
- 2)  $r = 1$



not a good fit b/c it's a quad. pattern



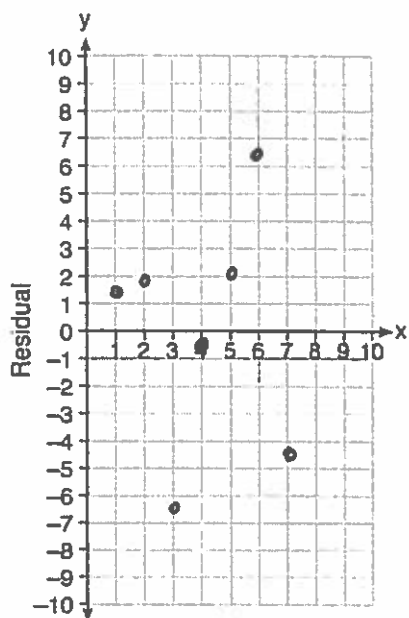
3 Use the data below to write the regression equation ( $y = ax + b$ ) for the raw test score based on the hours tutored. Round all values to the nearest hundredth.

Tutor Hours, x	Raw Test Score	Residual (Actual - Predicted)
1	30	1.3
2	37	1.9
3	35	-6.4
4	47	-0.7
5	56	2.0
6	67	6.6
7	62	-4.7

Equation:  $y = 6.32x + 22.43$

Create a residual plot on the axes below, using the residual scores in the table above.

Name: \_\_\_\_\_



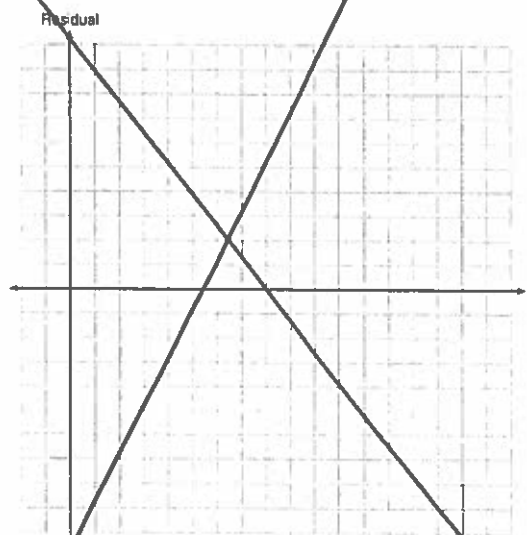
Based on the residual plot, state whether the equation is a good fit for the data. Justify your answer.

It is a good fit b/c  
 the residuals are  
 scattered + do  
 not form a  
 pattern.

4 The table below represents the residuals for a line of best fit.

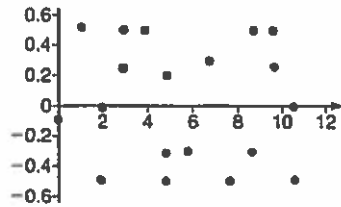
$x$	2	3	3	4	6	7	8	9	9	10
Residual	2	1	-1	-2	-3	-2	-1	2	0	3

Plot these residuals on the set of axes below.

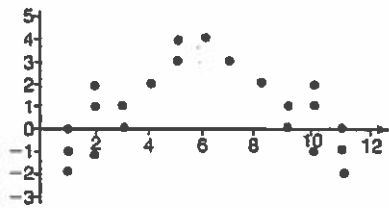


Using the plot, assess the fit of the line for these residuals and justify your answer.

- 5 The residual plots from two different sets of bivariate data are graphed below.



Graph A



Graph B

Explain, using evidence from graph A and graph B, which graph indicates that the model for the data is a good fit.

Graph A is a good fit because the residuals are scattered and do not form a pattern.

