

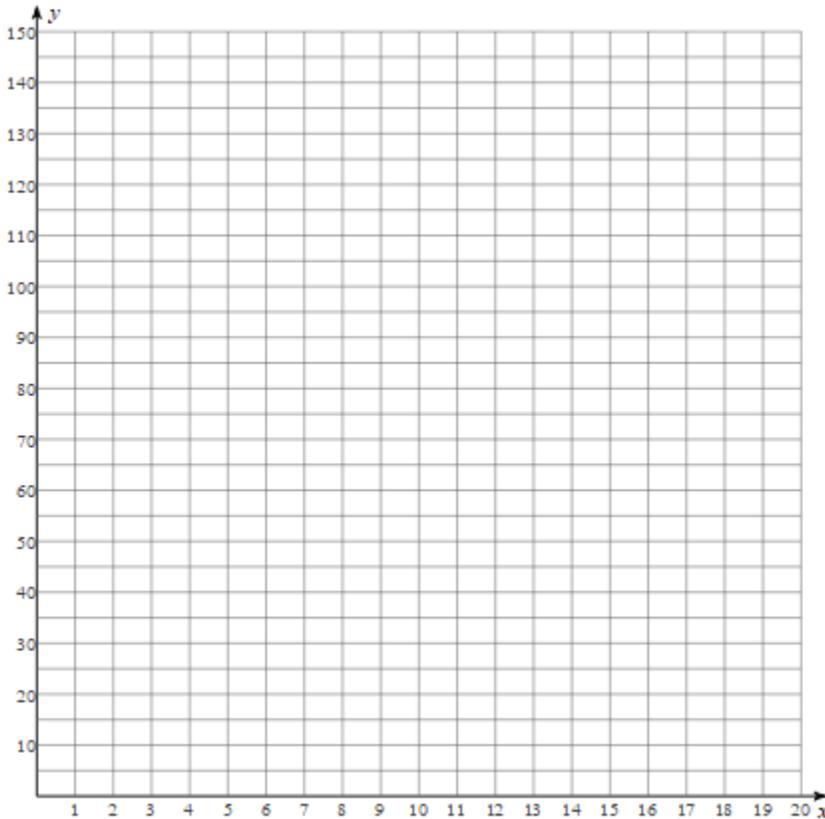
The table below shows relationship between number of times an infant cries and IQ.

Crying	IQ
10	87
12	97
9	103
16	106
18	109
15	114

Food for Thought:

Infants who cry easily may be more easily stimulated than others and this may be a sign of higher IQ.

1) Create a scatter plot and answer questions below, DO NOT use a calculator to find the line of best fit!



1) Draw a line of best fit.

2) Choose two best fitting points.

(____, ____) (____, ____)

3) Calculate slope by hand using points above.

4) Slope = ____

5) Calculate y-intercept using slope and and the first point.

y-int = ____

6) Write the equation of the line of best fit:

2) What are the units for slope?

3) What does the slope mean?

4) What does the y-intercept mean?

5) Now use your calculator to find the line of best fit:

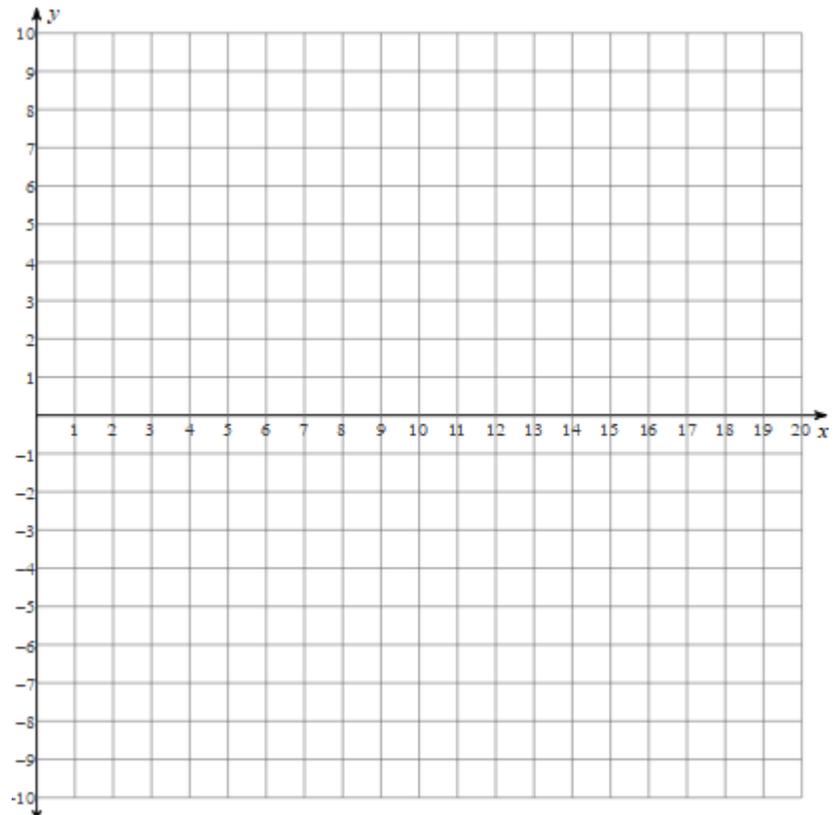
6) Using the equation above, predict what your IQ would be if you cried 22 times:

7) Think: Using the equation above, predict how much you would need to cry for an IQ of 159.

8) Determine the correlation coefficient: $r = \underline{\hspace{2cm}}$, What does this suggest?

9) Create a residual plot:

Crying	IQ	Predicted	Residual
10	87		
12	97		
9	103		
16	106		
18	109		
15	114		



The following have correlation. Determine whether it is causation. State yes or no:

10) As number of ice creams sold increases, the number of forest fires tend to increase.

11) As the number of paid hours increase, the amount of money paid increases.

12) As the time spent playing fortnight increases, the time spent on homework decreases.

The events x and y have a correlation coefficient of $r = -0.45$. What is the relationship between x and y ?

13) The events have a weak negative relationship.

Alton has a treadmill that uses the time on the treadmill and the speed of walking or running to estimate the number of calories he burns during a workout. The table gives workout times and calorie burned for several workouts.

14) Calculate the linear regression model.

15) How many calories would he burn in 60 minutes?

Show work:

16) How many calories would he burn in 1.5 hours?