

Unit 5: Correlation and Regression

An old myth says 1 dog year equals 7 human years, but that comparison is not accurate. An approximate comparison of ages is shown in the table:

Age of Cat or Dog (<i>in years</i>)	3 months (.25 years)	6 months (.5 years)	1	2	4	6	8	10	14	18	20	21
Approximate Equivalent Human age (<i>in years</i>)	5	10	15	24	32	40	48	56	72	90	94	101

1. Graph on a separate sheet of paper. What kind of graph is this? (Linear, Exponential, Quadratic etc.)
2. Use your calculator to determine the regression formula
3. What is the correlation coefficient?
4. Using your equation, determine the equivalent age of the animal who is:
 - a. Dog: 12 years old
 - b. Cat: 16 years old
5. Using your equation, how old would a cat or dog have to be to have the maturity of a human who is:
 - a. 65 years old
 - b. 78 years old
6. The documented world's oldest dog was named Bluey from Australia who died when he was 29 years and 6 months old. Find Bluey's approximate equivalent human age.

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Joshua wants to go to a Division A college to run track and field. His coach says he needs to better his speed in order for recruiters to take notice of him. Joshua started keep track of the numbers of weeks he spent practicing and his time on the 400m.

Weeks	1	2	3	4	5	6	7	8
400 m time	49.55	50.12	49.65	49.00	48.12	49.12	48.01	47.88

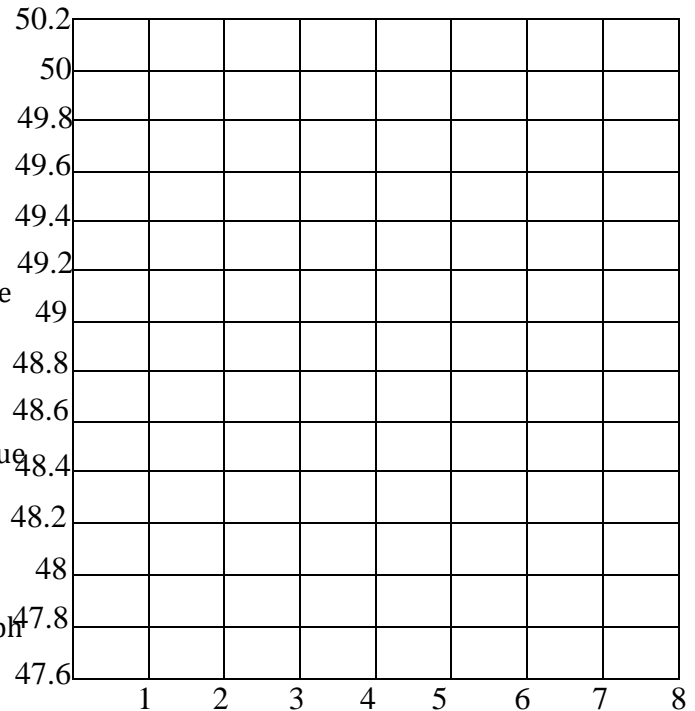
7. Graph the function and then determine the regression Formula

8. What is the correlation coefficient? So is this a strong or weak correlation? Is it positive or negative?

9. Using your regression formula, how fast would his time be after 11 weeks of practicing?

10. As he keeps practicing every week will his time continue to go down forever?

11. What will the graph look like if you continued this graph to week 52?



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