

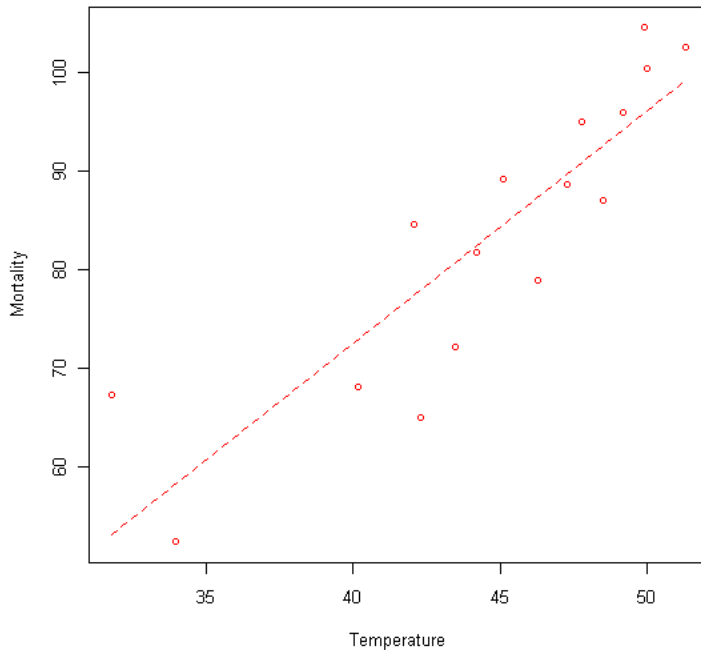
Solutions to Take Home Exam 2

Statistics 1, Sections 2,6,7

Fall 2009

Each correct response is worth 3 points, except question 7, which is worth 2 points. There are 20 points possible.

1. The relationship appears to be linear.



2. $y = -21.79 + 2.36x$, where x = temperature and y = mortality (Alternately, if you let x =mortality and y =temperature, the regression line is $y = 17.54 + 0.32x$)
3. For every one degree increase in temperature, the predicted mortality rate increases by 2.36. (Alternately, if you let x =mortality and y =temperature, for every one unit increase in the mortality rate, the predicted temperature increases by 0.32 degrees Fahrenheit.)
4. $R = 0.875$ indicates a strong positive linear correlation.
5. The predicted mortality rate for a region having temperature 62 degrees Fahrenheit is 124.4.
6. The data do NOT indicate the higher temperature causes death from breast cancer. It only shows there is a relationship, we would need more information to establish cause and effect.
7. Converting the temperatures to degrees Celsius using the formula $C = (5/9)(F-32)$, then rerunning the regression line and correlation coefficient yields the same correlation coefficient, but a different regression line. The best fit regression line is $y = 53.65 + 4.24x$.