2. The correlation between Internet (percentage of adult residents who use the internet) is 0.888 with GDP, 0.818 with cellular-phone use, 0.669 for literacy (percent who are literate), -0.551 for fertility (mean number of children per adult woman), and 0.680 for CO2 (CO2 emissions in metric-tons per capita).

   (a) Which variable has the strongest linear association with Internet?

   GDP

   (b) Which variable has the weakest linear association with Internet?

   fertility

   (c) Interpret the correlation between Internet use and Fertility.

   As internet use increases in a country, fertility tends somewhat to decrease. (or vise versa)

3. Let y=cell-phone use and x=GDP. The regression equation is $\hat{y} = -0.13 + 2.62x$

   (a) Predict cell-phone use at the (i) ~~maximum~~ minimum x value of 0.8 and (ii) ~~minimum~~ maximum $x = 34.3$

   (i) $\hat{y} = -0.13 + 2.62(0.8) =$ product 1.96 % use cell-phones @ GDP/capita of $800

   (ii) $\hat{y} = -0.13 + 2.62(34.3) =$ product 39.74% use cell-phones @ GDP/capita of $ 34,300

   (b) Interpret the slope of the prediction equation in terms of the data. Is the association positive or negative?

   When we increase GDP per capita by $1000 (1 unit) then the predicted cell-phone use increase 2.62 % points. This is a positive association.

   (c) For the US, $x = 34.3$ and $y = 45.1$. Find the predicted cell-phone use and the residual. Interpret this large ~~negative~~ positive value.

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   $\hat{y} = -.13 + 2.62(34.3) = 39.74 =$ predict cell-phone % @ GDP = $34,300/capita

   residual $= y - \hat{y} = 45.1 - 39.74$
   $= 5.36$

   The predicted cell-phone use for US is 5.36 % points higher than it's actual value.