

Unit 5 Review #2

a.) explanatory \rightarrow cost
response \rightarrow battery life

b.) positive
linear
moderate / strong
2 outliers (possible influential)

c.) $\hat{y} = 6.56 + -.0029x$

slope = $-.0029$ For an increase of \$1 in cost
battery life decreases .0029

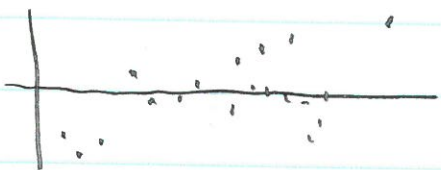
y-intercept = 6.56 If the netbook costs \$0, the
battery life is 6.56 hrs. (nonsense)

d.) $-.0697$ very weak negative linear relationship

e.) .6

f.) $6.56 + -.0029(600) = 4.82$ hrs

g.) not reliable, this is extrapolation. Don't extrapolate

h.)  not great, outliers are
really distorting every thing

i.) influential, take them out + the line has
positive slope and $r = .58$ significant changes

2a.) r can't be more than 1, $-1 \leq r \leq 1$

b.) eye color is not quantitative. Both variables must be quantitative.

c.) not necessarily. correlation measures the overall relationship between two variables, not between individual points

3.) husband - response $\bar{y} = 68.5$ $s_y = 2.7$

a.) wife - explanatory $\bar{x} = 64.5$ $s_x = 2.5$
 $r = .5$

$$\hat{y} = a + bx \quad b = .5 \left(\frac{2.7}{2.5} \right) = .54$$

$$a = 68.5 - .54(64.5) = 33.67$$

$$\hat{y} = 33.67 + .54x$$

b.) wife = $64.5 - 2.5 = 62$

husband $\hat{y} = 33.67 + .54(62) = 67.15$ in.

4.) a.) .9 b.) -.4 c.) .99 d.) -.85 e.) .5 f.) 0

- 5a.) Maybe not, overall relationship is positive
- b.) Not necessarily, have to see scatterplot
- c.) Don't know, have to see scatterplot
- d.) True, correlation does not rely on units

6.) a