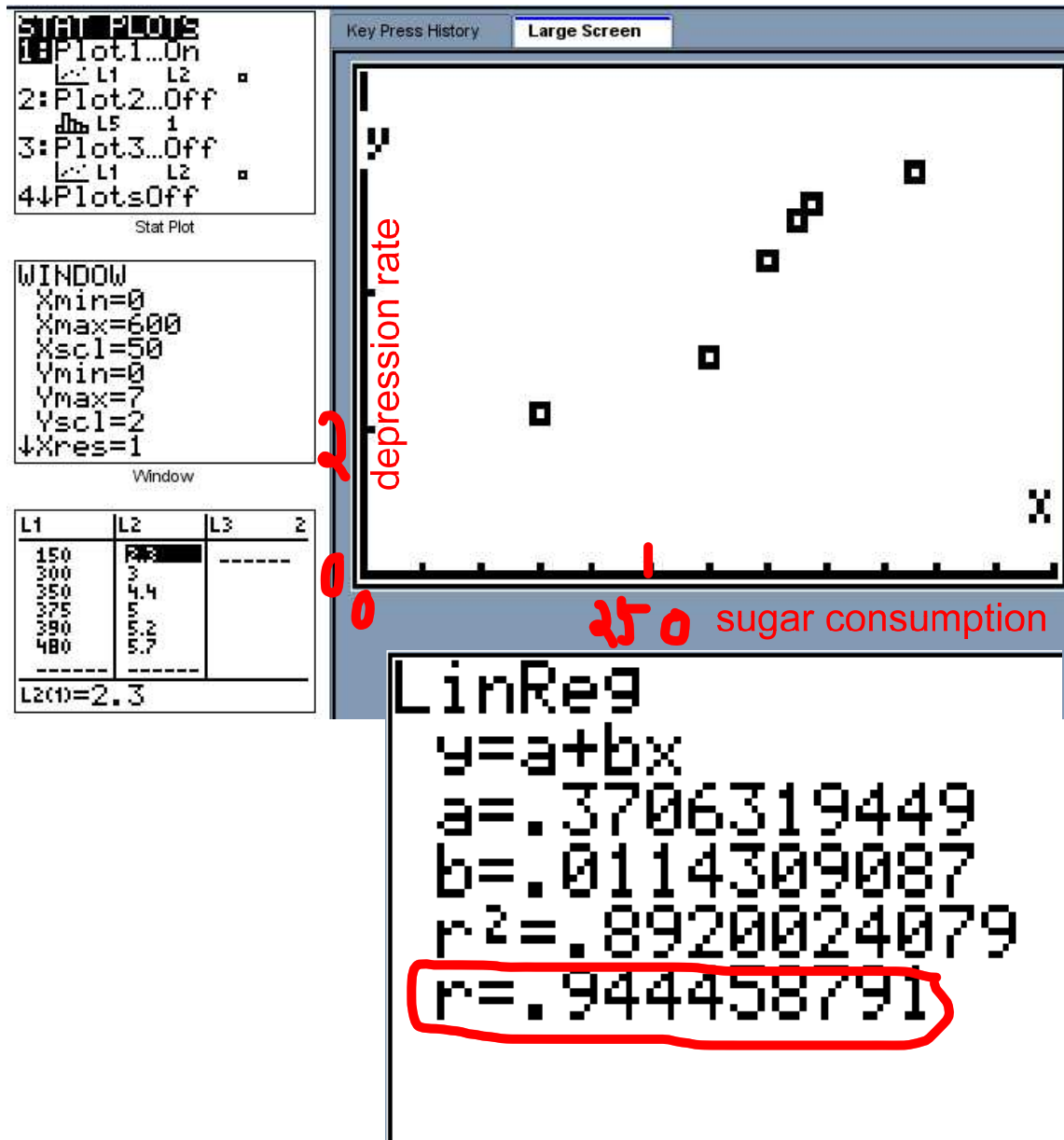


AP HW 5.1

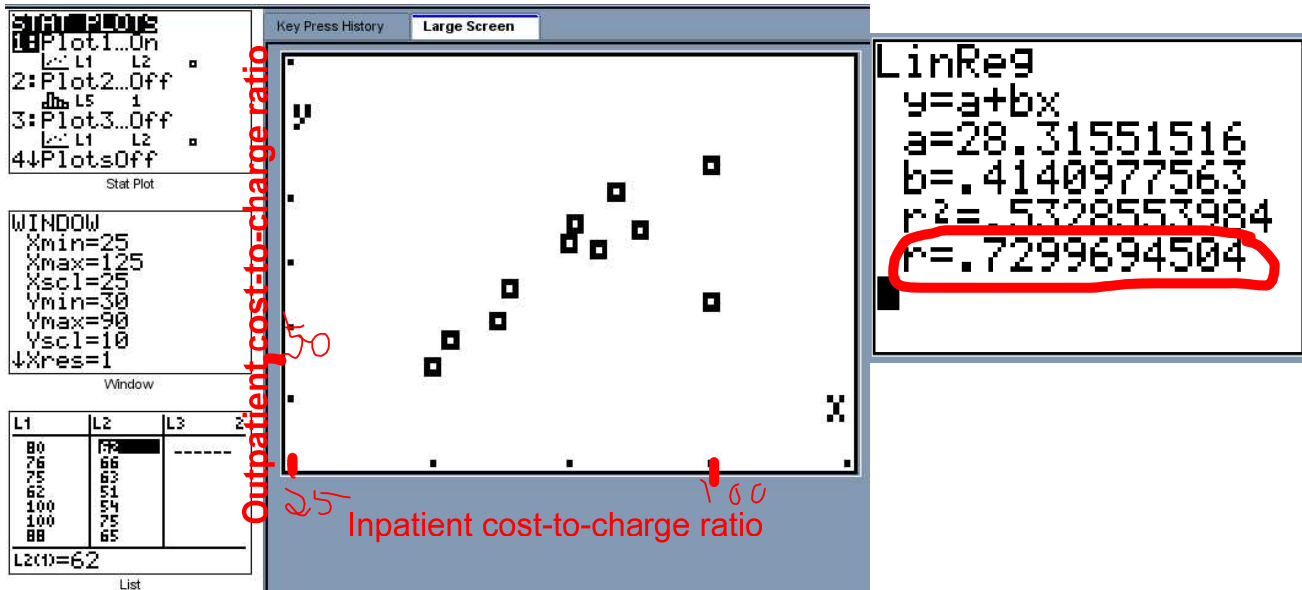
- 5.1
- a A positive correlation would be expected, since as temperature increases cooling costs would also increase.
 - b A negative correlation would be expected, since as interest rates climb fewer people would be submitting applications for loans.
 - c A positive correlation would be expected, since husbands and wives tend to have jobs in similar or related classifications. That is, a spouse would be reluctant to take a low-paying job if the other spouse had a high-paying job.
 - d No correlation would be expected, because those people with a particular I.Q. level would have heights ranging from short to tall.
 - e A positive correlation would be expected, since people who are taller tend to have larger feet and people who are shorter tend to have smaller feet.
-

- 5.2 The statement is incorrect. The correlation coefficient measures the extent to which x and y are linearly related. They may have a strong nonlinear relationship and yet have a correlation of zero.
-

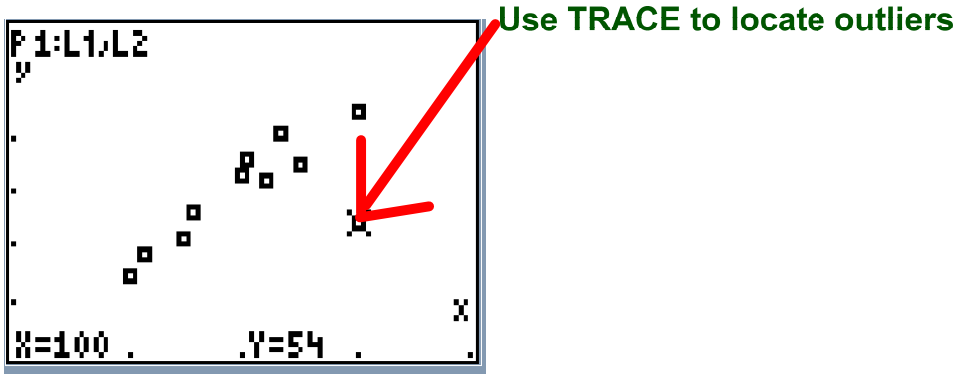
5.5 (a) The correlation between sugar consumption(x) and depression rate(y) is strong and positive ($r=.944$).



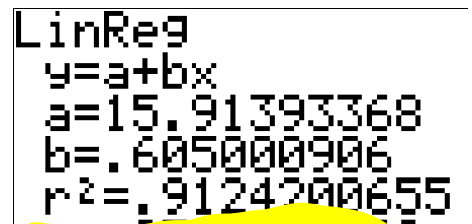
5.6 (a) The correlation between Inpatient cost-to-charge ratio(x) and Outpatient cost-to-charge ratio(y) is moderately strong and positive ($r=.73$).



5.6(b) There is 1 hospital, Harney District, that appears to be an outlier.



5.6(c) If Harney District, an apparent outlier, is removed then the relationship becomes much stronger with the correlation increasing from $r=.73$ to $r=.96$.



5.8 (a) The correlation between household and consumer debt has a weak relationship($r=.1178$). This is supported by a scatter plot that visually shows a weak relationship

```

LinReg
y=a+bx
a=5.703859093
b=.0331620532
r²=.0138798825
r=.1178129133
    
```

