11.7 Review

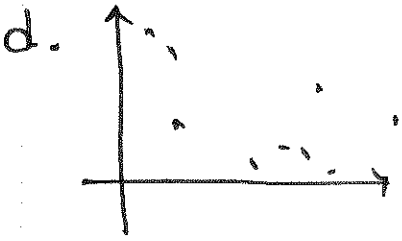
1. a. $r = -.769$
$\hat{y} = -6493.69x + 2148.82$

When the batting average is zero, the player should make 2148.82 Runs, and runs go down by 6.4 for every tenth increase in batting average

c. $\hat{y}_{(.350)} = -123.87$ not reasonable

you cannot make negative home runs.

d.



a linear plot is reasonable, although there is a lot of variation.

2. a

strong, negative, linear

b. $r = -.961$

c. $\hat{y} = -3.48x + 97.99$

if a person has 0 absences, they should get a 98 in the final.

Every day they miss, their grade falls by 3.5 points.

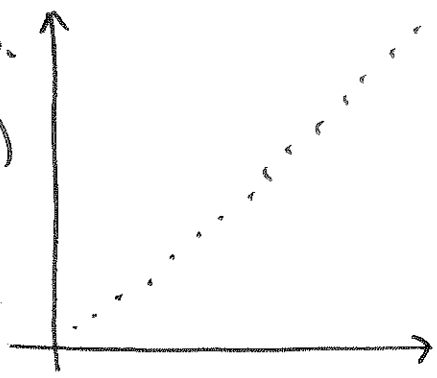
d. 12 absences $\hat{y} = 56.23$ (final grade)

e.

fairly random, good regression type.

3.

a)



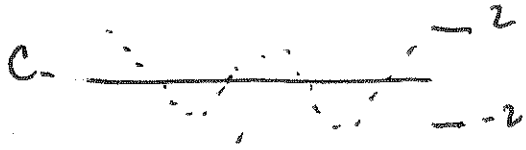
b. Linear regression

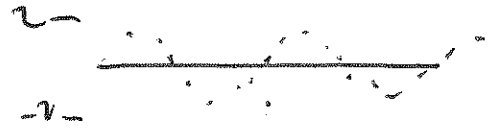
$r = .9966$

Exponential Regression

$r = .9970$

c.





residuals are in a sinusoidal pattern, but tend to be very close to the line. This is probably due to seasonal changes such as increased traffic or heating emissions.

4. a. $\hat{y} = 1.88x + 82.65$ $r = .962$

b. femur = 58cm 191.69 cm tall

c. person = 145 cm femur = $33.1649 = \hat{y}$

reality: femur = 35.6 cm

Residual = 2.435 cm.

5. a. $\hat{y} = 6.477x + .003$ $r = .943$

b. diameter 18" Age = 116.59 years

c. tree is 140 years $d = 21.614$ in

d. exponential: $r = .928$

the residuals lie a lot closer in the linear model than the exponential.

e I would use a linear model.