Biology 4605/7220 Name_____
Quiz #4a 13 October 2004

Gleason (1922 *Ecology* 3: 158-162) reported the following data on species number in relation to quadrat area in aspen woodlands in Michigan.

obsno	area(sq m)	Nsp
1	1	4.375
2	2	5.817
3	3	6.900
4	4	7.600
5	5	8.208
6	6	8.950
7	8	9.667
8	10	10.333
9	12	11.250
10	15	12.250
11	16	12.000
12	20	12.917
13	24	13.500
14	30	15.215
15	40	16.167
16	60	19.750
17	80	20.000
18	120	23.500
19	240	27.000

The species area curve estimated from this data is:

$Nsp = e^{1.59065} A^{0.327}$

(1) Compute the number of species expected in a 4 m^2 quadrat _____

(2) The expected number of species in 16 m^2 quadrat is 12.15 species. Write a data equation for the number of species in a 16 m^2 quadrat

_____ = _____ + _____

(3) Write an H_A/H_o pair to test whether there is a statistically significant relation between number of species *Nsp* and quadrat area *A*

(4) Complete an ANOVA table for the following regression model.

	ln(Nsp)	=	α	+	$z \cdot \ln A$	+	ϵ
df	18				1		17
SS	100				66		34

Source	df	SS	MS	F
model (A)	__	_____	_____	_____
error	__	_____	_____	
total	__	_____		