FOR 274 Assignment 11 [50 points] Name**: _____**

This assignment should be completed and handed in to the assignment box in the Forest Resources office by noon on Monday 16th of Novemeber. Partial credit will only be given for incorrect answers if you show your work.

1. Describe what is meant by the following terms:
   a. Total Fuel

   b. Available Fuel

   c. Fuels Complex

2. Calculate the moisture content of the following:
   a. Grass sample with a wet weight of 150g and an oven dry weight of 115g

   b. Pine needles with a wet weight of 0.2 lbs and an oven dry weight of 0.11 lbs

   c. Downed log with a wet weight of 260 kg and an oven dry weight of 190 kg

3. Describe what the time-lag system means in the context of fuels management.

4. Define and describe the 3 elements of flammability.

5. Describe the 6 fuel strata found in the Sandberg et al (2001) system.

6. What are fuel models used for and what are the assumptions and limitations in their use?

7. Explain how the method of the disc pasture meter works.

8. Calculate the moisture content of the following logs after a 20 hour dry down period at 10% relative humidity:

a. 1-hr dead fuel with an initial moisute content of 100%.

b. 10-hr dead fuel with an initial moisture content of 85%.

9. For the provided data sets please calculate the mean 1-hr, 10-hr, 100-hr, 1000-hr sound, 1000-hr rotten, total 1000-hr and total surface fuel loadings. You will need to draw on the formulas and tables of variable constance found in the CWD lecture.

a. Assuming a composite **nonslash** fuel type:

Length Measured		6 ft	6 ft	10 ft	**Sound/**	50 ft	
Plot	**%Slope**	**0-.25 in.**	**.25-1 in.**	**1-3 in.**	**Rotten**	**3+ (in)**	**Length (ft)**
1	0	7	5	3	sound	3	22
					rotten	4.5	35
					sound	6	40
2	5	37	20	0	rotten	6	47
3	5	20	8	1	sound	8	53
					rotten	16	64
4	0	8	12	5	sound	6	50
5	10	4	16	5	rotten	8	44

b. Assuming a composite **slash** fuel type:

Length Measured		6 ft	6 ft	10 ft	**Sound/ Rotten**	50 ft	
Plot	**%Slope**	**0-.25 in.**	**.25-1 in.**	**1-3 in.**		**3+ (in)**	**Length (ft)**
1	0	29	4	0	sound	12	57
2	0	19	11	0	sound	12	55
					rotten	8	28
3	10	10	5	1	rotten	6	39
					rotten	12	48
4	25	4	1	0	sound	8	33
5	10	1	4	0	rotten	14	61