

FOR 274 Assignment 8 [50 points] Name: _____

This assignment should be completed and handed in to the assignment box in the Forest Resources office by noon on Monday 26th of October. Partial credit will only be given for incorrect answers if you show your work.

1. Compute the log volume (in cubic feet) for the following logs according to Huber's, Smalian's, and Newton's formulas (assume inside bark for all measurements):

a. Small end diameter = 6.2 in

Midpoint diameter = 7.6 in

Large end diameter = 9.0 in

Length = 16 ft

b. Small end diameter =

24.0 in

Midpoint diameter = 26.4 in

Large end diameter = 28.7 in

Length = 32 ft

c. Small end diameter = 10.5 in

Midpoint diameter = 11.0 in

Large end diameter = 11.6 in

Length = 8 ft

d. Small end diameter = 32.0 in

Midpoint diameter = 33.0 in

Large end diameter = 33.5 in

Length = 18 ft

2. You inherit a clinometer which only has numbers on it. Describe how you would determine which scales the clinometer has.

3. What does crown class as used by foresters describe about a tree compared to its neighbors?

4. Refer to the table below to answer the following questions

Diameter	Scribner Decimal C	International 1/4-in	Number of Logs
6	+28	-2	89
7	26	-2	102
8	23	-3	134
9	21	-3	162
10	19	-4	155
11	17	-4	132
12	14	-6	167
13	12	-6	119
14	10	-6	128
15	8	-6	85
16	5	-7	74
17	3	-8	43
18	1	-8	42
19	-2	-9	22
20	-4	-9	16

- a) Produce a graph showing the overrun (+) or underrun (-) versus log diameter for each of these two log rules.
- b) Calculate the standard deviation of the overrun/underrun for these log rules and evaluate which is the most/least consistent. Explain your reasoning.

5. Express growth in terms of both DBH and Basal Area of the following tree as an annual percentage (or interest) rate:

- a) $DBH_1 = 8.2\text{in}$, $DBH_2 = 11.5\text{in}$, $n = 5$
- b) $DBH_1 = 4.3\text{in}$, $DBH_2 = 9.2\text{in}$, $n = 5$
- c) $DBH_1 = 10.8\text{in}$, $DBH_2 = 18.10\text{in}$, $n = 15$
- d) $DBH_1 = 19.60\text{in}$, $DBH_2 = 24.70\text{in}$, $n = 10$