

**WDSC 422 Homework – Assignment 3**  
**Balancing Harvesting System**  
 Harvesting Forest Products

Due

Productions and costs of functions for a logging system are presented in Table 1. This operation performs clearcut harvests of a 90-acre tract and uses feller-buncher for felling, cable skidder for skidding, knuckle-boom loader for loading, and tractor-trailer for hauling.

Table 1.

Function	Cords/PMH	MA %	Fixed Cost (\$/SMH)	Variable Cost (\$/PMH)	Labor Cost (\$/SMH)
Felling	7.83	65	15.91	19.14	9.1
Skidding	8.91	69	15.57	17.79	9.1
Loading	16.23	85	7.64	9.23	9.1
Hauling	3.50	90	12.50	13.00	9.1

Say 40 SMH/Week

Table 2.

Functions	Cords/PMH	MA %	Cords/SMH	# of Machine	Cords/SMH	UT %	Total Cost/SMH	\$/Cord
Felling	7.83	65						
Skidding	8.91	69						
Loading	16.23	85						
Hauling	3.50	90						
Total	_____							

Using the given information in Table 1 about the equipment available for this logging system, determine a “balanced” configuration. For your balanced system, answer the following questions:

- (1) Show your work and fill out Table2
- (2) Determine the balanced configuration
- (3) What is the limiting function in the logging system?
- (4) Weekly production?
- (5) Total cost per unit volume?