

Name _____

AE 469/569 – Exam 2
(Take-Home)
100 points

Problem:

Design a bucket conveyor to carry dry corn at 9000 bu/h. The discharge spout is to be 80 ft above the loading point. Design for $C/W = 1.3$.

Specify:

- Bucket size
- Bucket spacing
- Belt speed
- Horsepower required at motor shaft
- Head pulley diameter
- Foot pulley diameter
- Head pulley rotational speed in rev/min

Rules:

1. Make and state any additional assumptions needed to complete the problem.
2. You cannot discuss this problem with anyone else in the 469/569 class, but you may consult with anyone else.
3. You can use any references you want. Chapter 12 should be adequate. Cite any other references.
4. Turn in the completed exam to me or Kris (Room 213) by 5 pm Thursday May 7.