

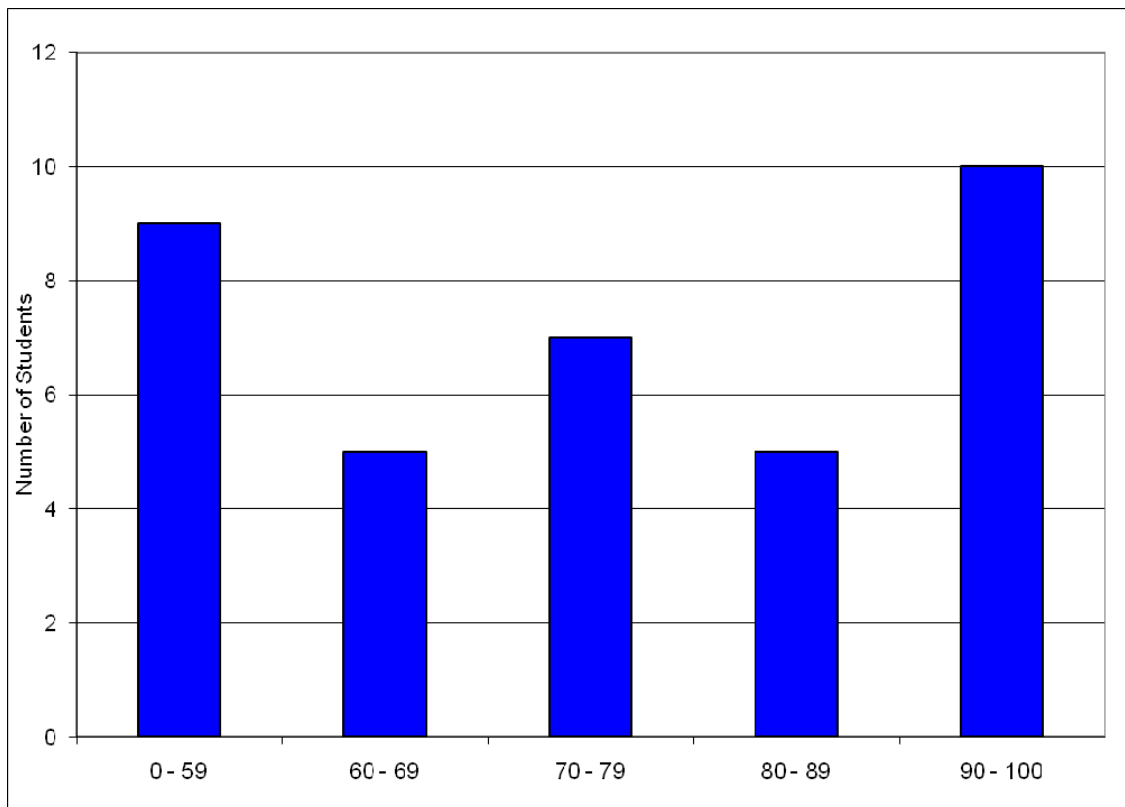
CVEN 339 – Summer 2009 – Exam #2

60 minutes allowed

36 Students

No curve applied to grades

Median	74
Mean	72.8
Std. Dev.	20.9
High	100
Low	25



Name: _____

CVEN 339 – Water Resources Engineering
 Summer Semester 2009
 Dr. Kelly Brumbelow, Texas A&M University

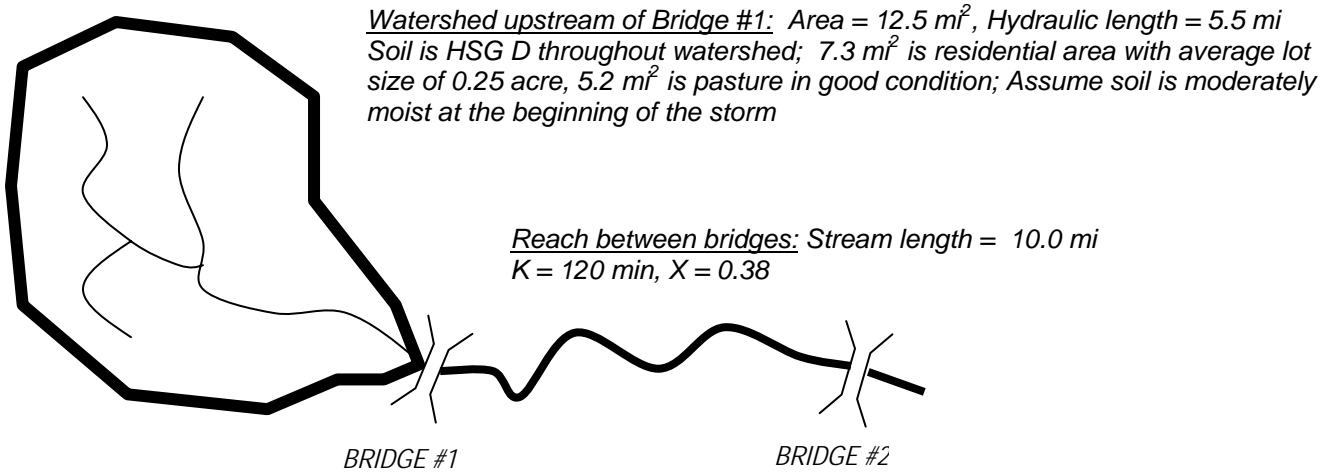
Exam #2

Open-book, Open-notes (4 pages, 2 questions); Time allowed: 60 minutes

1. Armadillo Creek is crossed by bridges at two locations as shown in the sketch below. The watershed above the first bridge has properties as given below and also has a 2 hr-unit hydrograph given in the table below. The creek reach between the two bridges has Muskingum routing parameters as shown in the sketch. Base flow in the stream can be assumed to be 25 cfs at both bridges.

If a thunderstorm occurs only on the watershed above the first bridge and rains 4.85 inches over a period of 4 hours, *what will be the peak streamflows to occur at the two bridges?*

(60 points)



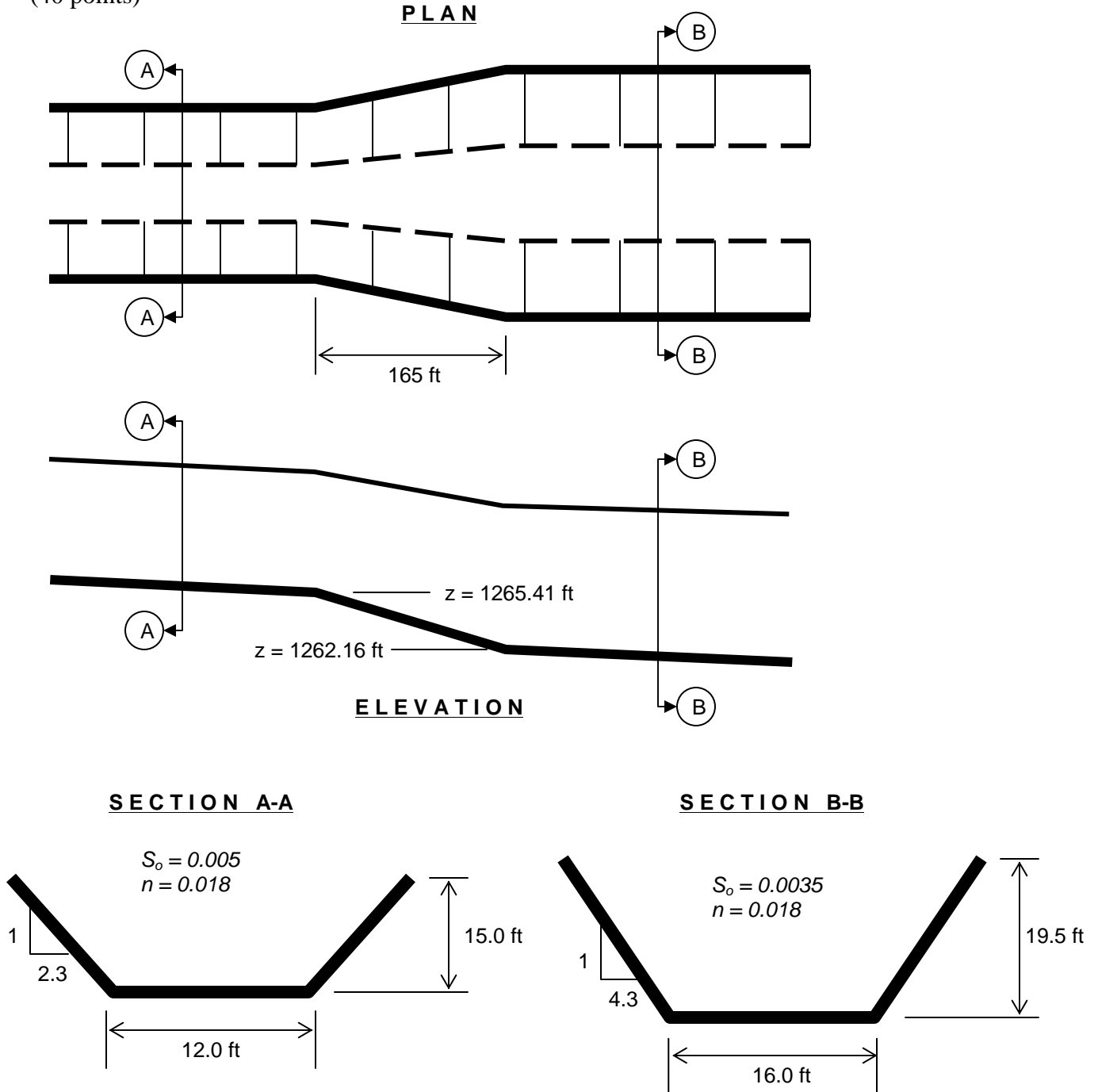
Time (hrs)	2 hr U.H. (cfs/in)	Time (hrs)	2 hr U.H. (cfs/in)
0	0	5	1203
1	621	6	587
2	1611	7	215
3	1955	8	72
4	1803	9	0

{Work space for #1}

2. An open channel includes a transition as shown in the drawings below. For a flowrate of 2,700 cfs, compute the following:

- (a) Expected depth of flow in each section of the channel,
- (b) Froude number of flow in each section of the channel,
- (c) Head loss in the transition, and
- (d) Minor loss coefficient (K_M) of the transition.
- (e) Comment on the computed value of K_M compared to the values expected from Table 5.4 (p. 288) in the course textbook.

(40 points)



(Work space for #2)