

Last Name: _____

First Name: _____

Math 1a Exam #2: Tuesday, November 23, 1999

SECTION (CIRCLE ONE):

Bing Cheng
MWF 10
Manoj Viswanathan (CA)

Bing Cheng
MWF 11
Eiichi Miyasaka (CA)

Robert Winters
MWF 10
Sahir Islam (CA)

Laura DeMarco
MWF 12
Brian Shaffer (CA)

Lisa Carbone
TTh 10
Karen Acquista (CA)
Rodolfo Perez (CA)

Lisa Carbone
TTh 11:30
Peter Hamel (CA)

Grisha Mihalkin
TTh 11:30
Jacob Honoroff (CA)

Question	Points	Score
1	15	
2	14	
3	16	
4	14	
5	14	
6	15	
7	12	
Total	100	

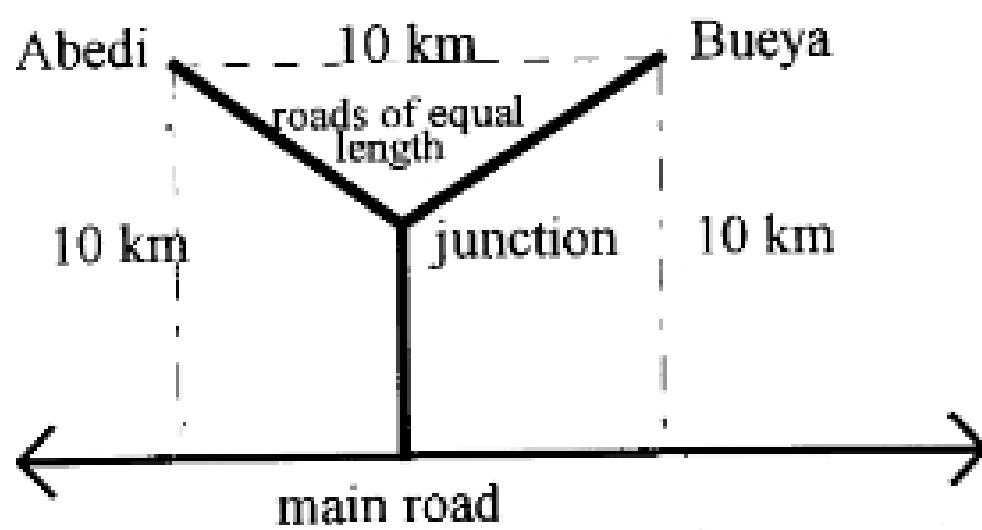
The time allotted for this exam is 90 minutes.

Calculators are not permitted.

Justify your answers carefully. No partial credit can be given for unsubstantiated answers.

- (1) Consider the two small Zairian towns of Abedi and Bueya, which currently cannot be reached by road. The main road from Kinshasa to Matadi passes 10 km south of the two towns.

The government plans to build a road system connecting the two towns to the main road, as shown in the diagram. How far from the main road should the junction point be chosen to minimize the total length of the new roads?



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- (2) A creature moves along the x -axis in such a way that its acceleration is given by $a(t) = 4 - 12t$. We also know that when $t = 1$ it is at the position $x = 3$ and has zero velocity at that moment. Where will the creature be when $t = 2$?