



# 1 What is the MCM?

n. M M . . . on. . . n. . . o . . . d o . . .

By

- 
- 
- 
- 

Add on

### Contest Rules & Logistics

You

on y non

Other than the control number, the paper must in no way identify the students, the advisor, or the school.

[www.comap.com/undergraduate/contests/mcm/instructions.php](http://www.comap.com/undergraduate/contests/mcm/instructions.php)

†

## History

... n x .y q o o r do . Bo d r . r r on r . r .o y n . M M

---

2000 . onor M n. on

B r .o r r .y . nno r a n . r n

## Background Research

Your initial research will be critical in framing the problem. ... M M ny ... R  
y nd ... nd n ... nd ... d n ... o ... L ... n ... e ... o ... con ...  
... n ... od ... o ... o ... G ... nd ... c ... y ... no ... nc ...

, ... n ... o ... d ... "n ... n ... o ... y ... n ... y ... n ... od ... c ... d ... y ... o ...  
... o ... nd ... e ... conc ... o ... n ... "n ... n ... d ... o ... c ... n ... e ... o ... o ... o ... o ...  
"n ... n ... d ... n ... c ... y ... o ... d ... d ... n ... d ... e ... e ... x ... on ... y ... B ... d ... o ... nd ... on ... y  
nd ... o ... n ... on ... A ... c ... An ... y ... o ... n ... n ... n ... nd ... d ... y ... Mod ... c











## Programming

ny M M. > . on . o d co o co o n n  
o.o.y n n n d n MA LAB y. on nd c  
y d o con. o G o c o n on yo c n  
co o y o o o n n.

**Visualize data.** Ln o c o o nd o. R. o z d. n  
n nd n n yo G o c o n n on n c y d n  
o o d. o M c o. c n o o. n o. o z on

**Numerical algorithms.** B o con. n c o o nd n n  
o o o. z on n n nd o n d n. B o d o n  
o o cod o co on n c o o n n on n MA  
LAB nc d n n c o n o. y o o M o o nd od  
n n n o n yo o n n cod. o  
n. y c. n **LN A** nd o. n.

**Debug.** n cod n y n o n cod. no o o d. o o o d  
y yo o n n on n n n on od o o  
n nd d c. co n n o o o. ce. cod. B. don. o o c d y yo  
y o co c. n o. co. c nc o y

**File I/O.** c y, yo o n n nd. on. o n yo n d. o  
n. d. n. A ood. n c on o. o o o. dd.  
o n on n o n co d. d. o. dd. y  
n.

co > co y. n d no. c. n on o n n nd R. d  
y > d on n on o n n MA LAB on n nd on n d  
c c on on o nd. n n o n o n c n  
o on n o o cod n nd co o on

## Writing

n con. n o z d n G n on o n n nd  
d y con. n o n n on n on d n.  
G.

co nd X n o od c n o on y c n c n c y n  
n. o M c o. o d X nd n on nd c y n n y n dd. on o

o . . . o . . . c . . . n . . . nd c . . . nc n . . . nd . . . n . . . n . . . d c o . . . y

Citations.

... o ... con ... o ... G. d n. ... R. o ... c n. d o. d  
... n.

Monday: ... .. y nd, y, d, o, .. d y

### Thursday: The Contest Starts

... .. A ... .. con... .. d .  
[www.comap.com/undergraduate/contests/mcm](http://www.comap.com/undergraduate/contests/mcm) nd [www.mirror.comap.com/mcm](http://www.mirror.comap.com/mcm)

1. The first condition of the code of ethics is that the employee must be honest and fair in all business transactions.

Sunday:

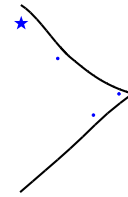
... on ... and ... on ...

Monday:



## Random Ascent Hill Climb

```
y ← random()
for i = 1 to N do
{
  x ← random()
  if f(x) < f(y)
    y ← x
}
```





## 6 Common Failures to Avoid

Don't charge into the contest blindly. Don't rate solutions arbitrarily. Avoid arbitrary or unnecessary assumptions. Avoid modeling everything in one monolithic simulation. Don't pick and compare anecdotal solutions.

**Don't charge into the contest blindly.** Don't charge into the contest blindly. Don't charge into the contest blindly. Don't charge into the contest blindly. Don't charge into the contest blindly.

**Don't rate solutions arbitrarily.** Don't rate solutions arbitrarily. Don't rate solutions arbitrarily. Don't rate solutions arbitrarily. Don't rate solutions arbitrarily.

**Avoid arbitrary or unnecessary assumptions.** Avoid arbitrary or unnecessary assumptions. Avoid arbitrary or unnecessary assumptions. Avoid arbitrary or unnecessary assumptions. Avoid arbitrary or unnecessary assumptions.

**Avoid modeling everything in one monolithic simulation.** Avoid modeling everything in one monolithic simulation. Avoid modeling everything in one monolithic simulation. Avoid modeling everything in one monolithic simulation. Avoid modeling everything in one monolithic simulation.

**Don't pick and compare anecdotal solutions.** Don't pick and compare anecdotal solutions. Don't pick and compare anecdotal solutions. Don't pick and compare anecdotal solutions. Don't pick and compare anecdotal solutions.

## 7 Closing Remarks

... M M... o. o... n ... n o... o... n.y.o... n c... y

BL M B      Acc      A o

n q      o n      n d o y      o      nd      n y  
g      o g n o d      n      n      c n      c y d      c      o      o      no      o y  
o d      n      n      n q      y      n n c n      n      on      o o d  
g      nd n      co      o      o      o      n y no n      n d n c      g      n  
n      no nco      on o c      no c      n      n      o      n      n      n c  
n      n      y no      c      no c      o      n      n      o      o nd n

A n      nd      con      n      o      ce      do n      g      o      nd      n      nd  
n n nc      o      ce      o      n      co      Mo o      g      nd      co  
con      n y o d      o nd      o      o      y      o      o      n      nd n o  
o      d o o      c      o      con d      g      o      d o  
c      n      nd      y      d n n      o      n      A      g      n      c

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