Hi, I'm Greg. I'm a NYC tutor! I love helping students. I tutor many subjects, assist with homework help, etc. I mainly specialize in specialized tests.

As it turns out, I haven't been able to get to do as many livestreams as I have in past years (yet, hopefully that changes). Therefore, I thought it would be fun to start a Problem Of The Day Series. I will put up a problem and leave it running for a while. You guys will then analyze it, and come up with possible solutions and alternative solutions on your own. I'll eventually post the answer in some manner.

For now we'll play it by ear how that will happen and for how long I'll leave up a problem. But right now I'm thinking of keeping the problem up maybe 2 hours minimum and maybe even in some cases 4 or 5 hours depending upon the dynamics and my situation. Unlike my AMA (Ask Me Anything) lifestream sessions, I will not be checking in every few minutes although I may from time to time join into the discussion. Again, the idea is for you guys to discuss out the problem.

Please be respectful to each other in this endeavor and let's make this fun, educational and forward-thinking. Keep the comments within the spirit of what I'm doing here. Please email me at GregsTutoringNYC@gmail.com if needed.

HERE'S THE PROBLEM: <———
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57. Jack is a slower runner than Kack, and Kack is a faster runner than Lack. Lack is a faster runner than both Mack and Nack. Which of the following statements is true?

(A) The slowest runner must be Jack.
(B) The slowest runner must be Mack.
(C) The slowest runner must be Nack.
(D) Either Mack or Nack must be the slowest runner.
(E) Jack, Mack, or Nack could be the slowest runner.

HERE'S THE SOLUTION:
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a) Jack is slower than Kack

J < K

b) Kack is faster than Lack

L < K

c) Lack is faster than Mack and Nack

M < L
N < L

So what we have is:
J < K
L < K
M < L
N < L

i) Between Mack and Nack we don't know who is the fastest or slowest.

ii) Between Jack and Lack we don't know who is the fastest or slowest.

iii) In addition to (ii) we also do not know between Jack and Mack and Nack.

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Iterating through the answer choices:
(A) The slowest runner must be Jack.
  Jack might be the slowest, but Mack or Lack might be too.

(B) The slowest runner must be Mack.
  Mack might be, but Nack might be too, furthermore, Jack might be too.

(C) The slowest runner must be Nack.
  Nack might be, but Mack might be too, furthermore, Jack might be too.

(D) Either Mack or Nack must be the slowest runner.
  Mack or Nack might be, but Jack might be too.

(E) Jack, Mack, or Nack could be the slowest runner.
  Yup, fer shore. Another way to write the expression tree above in a kind of shorthand notation is:

  ((M&N) < L) & J < K

  Note: & mean “and”

  The “reverse” is true as well:

  K > J & (L > (M&N))

Question:
  Do you understand where Lack fits into things?
  Can Lack be the slowest?

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