February Challenge Problem

You're given 7 line segments, each of which is longer than 1 cm., but shorter than 13 cm. Prove that it is possible to select three of them and construct a triangle having the three segments as sides. For example, if you were given segments of length

3.0, 1.2, 10.4, 4.0, 12.3, 5.0, 2.4,

you could choose the segments of length 3,4,5 to build a triangle, but it's impossible to build a triangle having sides of length 1.2, 2.4 and 12.3. Of course, you have to prove that it's always possible, no matter which 7 lengths you're given.

Would the statement still be true if you were given 6 such line segments?

WHO'S ELIGIBLE: Any registered student at the University of Winnipeg.
HOW TO SUBMIT: All submissions should be brought to the mathematics and statistics departmental office on the 6th floor of Lockhart Hall by Friday, February 25, 2004
PRIZE: A $15 gift certificate in Polo Park. In the event of multiple winners, the prize will be determined by a random draw.