Since \( p \leq 4 \) and \( z \leq 1 \), the inequality clearly holds for \( z \leq 1/2 \). For \( z > 1/2 \), we have

\[
2p(1 - 2z) + z(5z + 3) \geq 8(1 - 2z) + z(5z + 3) = (1 - z)(8 - 5z) \geq 0 .
\]

It now follows that the only time equality can occur is if \( a = 1 \) and \( x = y = z = 1 \), or \( a = 1 \) and \( z = 0 \), \( x = y = 2 \).

**Case 2.** Here \( p > 4 \). Let \( y = z = \varepsilon \). Then \( x \approx p/2\varepsilon \), so that (2) holds. Now let \( z = 0 \), \( x = y \). Then \( x = y = \sqrt{p} \), so that the inequality sign in (2) is reversed.

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That completes the *Corner* for this issue. Send me your Olympiad Contest materials and your nice solutions to problems from the *Corner*.

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**Mathematical Poems**

1. no solution
   my mind is a matrix
   that has been reduced
   into row echelon form
   and proven to be
   - inconsistent

2. i'm tired of being a zero vector
   i'm tired of being a zero vector
   with no direction
   no dimension
   and no magnitude;
   what i need is another element
   - but that would be
   - a contradiction
   of my definition

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