Answer on question 39057 – Math – Matrix

A is 3*4 real matrix and Ax = b is an inconsistent system of equations. The highest possible rank of A is
a) 1   b) 2   c) 3   d) 4
Solution

According to the Rouché–Capelli theorem, any system of linear equations (underdetermined or otherwise) is inconsistent if the rank of the augmented matrix is greater than the rank of the coefficient matrix. The highest possible rank of augmented matrix is 3 and it is greater than the rank of A. Therefore, The highest possible rank of A is 2.

Answer: b)