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PROOF OF ATIYAH'S CONJECTURE FOR TWO SPECIAL TYPES OF CONFIGURATIONS*

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Abstract. To an ordered N-tuple $(x_1, \ldots, x_N)$ of distinct points in the three-dimensional Euclidean space Atiyah has associated an ordered N-tuple of complex homogeneous polynomials $(p_1, \ldots, p_N)$ in two variables x, y of degree $N-1$, each p_i determined only up to a scalar factor. He has conjectured that these polynomials are linearly independent. In this note it is shown that Atiyah's conjecture is true for two special configurations of N points. For one of these configurations, it is shown that a stronger conjecture of Atiyah and Sutcliffe is also valid.

Key words. Atiyah's conjecture, Hopf map, Configuration of N points in the three-dimensional Euclidean space, Complex projective line.

AMS subject classifications. 51M04, 51M16, 70G25

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