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A proof of van Aubel's theorem using orthogonal vectors.

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Summary: We show how two linearly independent vectors can be used to construct two orthogonal vectors of equal magnitude in a simple way. The proof that the constructed vectors are orthogonal and of equal magnitude is a good exercise for students studying properties of scalar and vector triple products. We then show how this result can be used to prove van Aubel's theorem that relates the two line segments joining the centres of squares on opposite sides of a plane quadrilateral.

Classification: G70
Keywords: orthogonal vectors; scale triple product; vector triple product; van Aubel's theorem; quadrilaterals
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