

The diophantine equation $y^2 = x^8 + x^4 + x^2$ and modern arithmetic geometry

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The Greek mathematician Diophantus (3rd century AD) asked for the solutions of the equation $y^2 = x^8 + x^4 + x^2$ (in positive rational numbers). This particular equation carries special difficulties that makes it particularly interesting even from the modern of view. We will review in passing its connection to the progresses made during the 20th century on rational points on algebraic curves and abelian varieties.