

Solving Radical Equations by Fiat: Radicals Be Gone!

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In algebra, the traditional method of solving a radical equation in most textbooks involves first getting a radical expression (say, a square root of some polynomial) alone on one side of the equation. Then both sides of this new equation are squared, resulting in the radicand of the isolated radical expression without the radical. This process is often phrased as “getting rid of the radical.” Although this method is quite successful for equations that involve at most two square root expressions, it leads to huge and unnecessary complications when there are three or more radical expressions, especially when some of the radicals have indices that are three or greater. In this article, we present a different method, called the Fiat Method that is universally applicable to solving many radical equations (of a certain large class), no matter how complicated they are. The method demonstrates that all radical equations (of the noted large class) are intricately related to derived polynomial equations whose solution sets contain those of the radical equations.

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