

The final result in this section, known as Taylor's<sup>11</sup> theorem, approximates functions using  $n$ th-degree polynomials. Naturally, some sort of an "error" will be involved. Taylor's theorem, which involves ideas to be covered again in Chapter 8, is another generalization of the mean value theorem and is an important proving tool in the area of numerical analysis.

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<sup>11</sup>Brook Taylor (1685–1731) was born to a wealthy English family. The theorem for which Taylor is best known did not receive notoriety until Euler applied it in calculus. Still later, full appreciation for Taylor's theorem resulted from the work of Lagrange. Taylor also devoted his writings to magnetism, capillary action, thermometers, and later, to religion and philosophy.