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Prime rational functions.

Let f be a complex rational function. If f can be written as the composition $g \circ h$ of two rational functions g and h which are not units under the operation of function composition, we say that f is composite. Otherwise, we say that f is prime. We give sufficient conditions for a complex rational function f to be prime through various means. Specifically, making use of the set of units under function composition, we determine conditions on the multiplicities of the zeros and poles of f which guarantee that it is prime. We also consider some instances dealing strictly with the case of complex polynomials. (Received January 29, 2019)