Basic Properties of Continuous Functions

For any real number \( c \), suppose the functions \( f \) and \( g \) both are continuous at \( x=c \). Then, each of the following are continuous at \( x=c \).

Constant Multiple \( kf \)
Sum \( f + g \)
Difference \( f - g \)
Product \( fg \)
Quotient \( \frac{f}{g} \) provided \( g(c) \neq 0 \)
Algebraic Power \( [f]^n \)
Composition \( f \circ g \)