The function is of the form of a*b^x which is an exponential function with base b.

Domain: All Real Number
Range and Co-Domain: a*b^x > 0
Restrictions: a cannot be zero.

Characteristics:

graph crosses the *y*-axis at (0,1)
• when $b > 1$, the graph increases (exponential growth)
• when $0 < b < 1$, the graph decreases (exponential decay)
• the domain is all real numbers
• the range is all positive real numbers (never zero)
• graph passes the vertical line test for functions
• graph passes the horizontal line test for functional inverse.
• graph is **asymptotic** to the *x*-axis - gets very, very close to the *x*-axis but, in this case, does not touch it or cross it.