Directions Use logarithmic differentiation to find the derivatives of the given functions.

$$1. y = x^{\sin(x)}$$

$$2. y = \frac{e^x x^2 \sin(x)}{x+1}$$

Directions Use logarithmic differentiation to find the derivatives of the given functions

$$1. \quad y = (x+1)^x$$

$$2. y = \frac{x\sqrt{\sin(x)}}{5 + e^x}$$