Calculus Section 5.5 Exponential Functions w/ Function Bases
-Determine the derivative of exponential functions with functions as bases

Homework: page 362 #’s 63, 64, 67-70

When you have a function raised to a function power, use $ln$ to differentiate.

**Example) Example)**
Find $\frac{dy}{dx}$ for y = xx Find the equation of the line tangent to
 $y=sinx^{cosx}$ at x = $\frac{π}{2}$.

**A Special Limit Involving e**$$\lim\_{x\to \infty }\left(1+\frac{1}{x}\right)^{x}=\lim\_{x\to \infty }\left(\frac{x+1}{x}\right)^{x}=e$$

**Proof:**