

AP CALCULUS AB –
DERIVATIVES INVOLVING LOGARITHMIC AND EXPONENTIAL FUNCTIONS

- 1) For all x (except 0), calculate

$$\frac{d}{dx} [x \ln|x| - x] =$$

- 2) For $x > 0$, calculate

$$\frac{d}{dx} [x \ln x - x] =$$

- 3) For all x (except 0), calculate

$$\frac{d}{dx} \left[x \log_b |x| - \frac{x}{\ln b} \right] =$$

- 4) For $x > 0$, calculate

$$\frac{d}{dx} \left[x \log_b x - \frac{x}{\ln b} \right] =$$

- 5) For all x , calculate

$$\frac{d}{dx} \left[\frac{b^x}{\ln b} \right] =$$