

- Which of these is a definition of  $a^x$  for all positive numbers  $a$  and all real numbers  $x$ ?  
(2017-01-11 — practice)
  - A.  $\ln(x \cdot e^a)$
  - B.  $a$  multiplied by itself  $x$  times
  - C. the unique function for which  $\frac{d}{dx}[a^x] = a^x$
  - D.  $\exp(x \ln a)$
- Which of these statements is false? (2017-01-11 — practice)
  - A.  $\ln(abc) = \ln(a) + \ln(b) + \ln(c)$
  - B.  $\frac{d}{dx}[\ln x] = \frac{1}{|x|}$  for all nonzero numbers  $x$
  - C.  $y = \exp(x)$  if and only if  $x = \ln(y)$
  - D.  $e^x = \exp(x)$