

- $\log_{10}(x)$  and  $\ln(x)$
- $\lim_{x \rightarrow 0} \log_{10}(x)$
- $\lim_{x \rightarrow \infty} \ln(x)$
- Properties of logarithms (all five)

1. Find  $x$  such that  $3^{x+7} = 12$ .

2. Suppose that the population of a cities is given (in thousands) by  $P(t) = 150(1.02)^t$ . Find  $P_0$  and  $k$  if we rewrite this as  $P(t) = P_0 e^{kt}$ .