

Sec 4.3.3
Change-of-Base Formula

Change of Base Formula

For any base $a > 0$ and $a \neq 1$

$$\log_b x = \frac{\log_a x}{\log_a b}$$

or

$$\log_b x = \frac{\log x}{\log b} = \frac{\ln x}{\ln b}$$



Use common or natural logs and a calculator to evaluate-

base 10

base e

log₅140

log₇2506

log₅140

*use ln

$$\frac{\log 140}{\log 5}$$

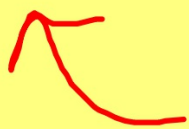
$$\frac{\log 2506}{\log 7}$$

$$\frac{\ln 140}{\ln 5}$$

$$\approx 3.07$$

$$\approx 4.02$$

$$\approx 3.07$$



Suggested Practice

Section 4.3

page 477

71,73,75,77

