

PROPERTIES OF LOGARITHMS

Frequency: ★

Logarithms were developed to assist in computing with LARGE numbers by allowing mathematicians to work with addition instead of multiplication, subtraction instead of division, and multiplication instead of exponents. The invention of the modern computer has decreased their usefulness.

I. Logarithms and Exponents

$$\log_7 49 \rightarrow$$

$$\log_5 5 \rightarrow$$

$$\log 1000 \rightarrow$$

II. Properties of Logarithms

Here are the logarithmic conversions you will need to know for the ACT:

Converting Multiplication into Addition

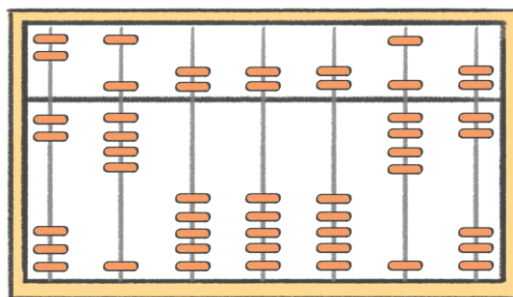
$$\log_b(AC) \Leftrightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Converting Division into Subtraction

$$\log_b(A/C) \Leftrightarrow \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

Converting Exponents into Multiplication

$$\log_b A^C \Leftrightarrow \underline{\hspace{2cm}}$$



HOW WILL THIS LOOK ON THE ACT?

Simplify $5\log_6 6^{3/5}$.

$$\underline{\hspace{2cm}} \cdot 5\log_6 6$$

$\underline{\hspace{2cm}}$

$\underline{\hspace{2cm}}$

$\underline{\hspace{2cm}}$