

2.3 Properties of Logarithms

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You have seen logarithms with many bases. The \log key on a calculator finds \log_{10} of a number. To evaluate a logarithm with any base, use the **Change of Base Formula**.

$$\log_b m = \frac{\log_c m}{\log_c b}$$

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What is the value of the expression?

$$\log_{81} 27$$

$$m = 27$$

$$b = 81$$

$$\frac{\log(27)}{\log(81)} = .75$$

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What is the value of the expression?

$$\log_5 36$$

$$m = 36$$

$$b = 5$$

$$\frac{\log(36)}{\log(5)}$$

$$= 2.2266$$

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What is the value of the expression?

$$\log_8 32$$

*DONT
simplify

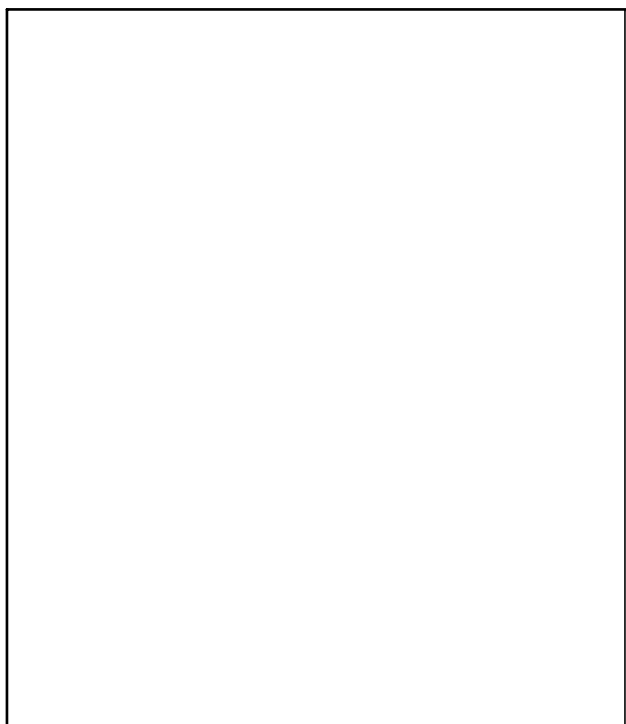
$$\frac{\log(32)}{\log(8)}$$
$$= 1.6667$$

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What is the value of the expression?

$$\log_4 18$$
$$\frac{\log 18}{\log 4} = 2.0849$$

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