

# Logarithms

**6/6 points (100%)**

Quiz, 6 questions

**✓ Congratulations! You passed!**

Next Item

1 / 1  
points

## 1. Introduction and Learning Outcomes

The goal of this assignment is to practice with logarithms that appear frequently in the analysis of algorithms.

Recall that  $\log_a n$  is the power to which you need to raise  $a$  in order to obtain  $n$ .

The main rules for working with logarithms are the following:

1.  $\log_a (n^k) = k \log_a n$
2.  $\log_a (nm) = \log_a n + \log_a m$
3.  $n^{\log_a b} = b^{\log_a n}$
4.  $\log_a n \cdot \log_b a = \log_b n$

Is it true that  $(\log_5 n)^2 = 2\log_5 n$ ?



Yes



No

**Correct**

$(\log_5 n)^2$  is just  $(\log_5 n)(\log_5 n)$

# Logarithms



1 / 1  
points

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2.

$$\log_2 n \cdot \log_3 2 = \log_3 n$$



Yes



**Correct**



No



1 / 1  
points

3.

$$n^{\log_2 n} = n$$



Yes



No



**Correct**



1 / 1  
points

4.

$$\log_3(2n) = \log_3 2 \cdot \log_3 n$$



Yes



No



**Correct**



1 / 1  
points

## Logarithms

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5.

$$\log_{10}(n^2) = 2\log_{10} n$$

6/6 points (100%)



Yes

**Correct**

No

1 / 1  
points

6.

$$n^{\log_7 3} = 7^{\log_3 n}$$



Yes



No

**Correct**

$$n^{\log_7 3} = 3^{\log_7 n}$$

