



**Congratulations! You passed!**

TO PASS 60% or higher

Keep Learning

GRADE  
**100%**

## Logarithms

TOTAL POINTS 6

### 1. Introduction and Learning Outcomes

1 / 1 point

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  $(\log_5 n)(\log_5 n)$

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

1 / 1 point

- ☒ Yes
- ☐ No



Correct

### 3. $n^{\log_2 n} = n$

1 / 1 point

- ☐ Yes
- ☒ No



Correct

### 4. $\log_3(2n) = \log_3 2 \cdot \log_3 n$

1 / 1 point

- ☐ Yes
- ☒ No



Correct

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

1 / 1 point

- ☒ Yes
- ☐ No



Correct

### 6. $n^{\log_7 3} = 7^{\log_5 n}$

1 / 1 point

- ☐ Yes
- ☒ No



Correct

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