Name _____ Date _____

Solve for the Unknown (Using Logarithms) Problems - Step-by-Step Lesson

Solve for the unknown.

$\log_2 b + \log_2 32 = 7$

Explanation:

There are two ways to determine b.

1. **Both logs have the same bases so we can multiply their arguments.**

$\log_2 b + \log_2 32 = 7$

$\log_2 b * 32 = 7$

$32b = 2^7$

$32b = 128$

$b = 4$

OR

2. **As we know $\log_a a = 1$**

$\log_2 b + \log_2 32 = \log_2 b + \log_2 2^5$

$\log_2 b + 5 \log_2 2 = 7$

$\log_2 b + 5 = 7$

$\log_2 b = 2$

$b = 2^2 = 4$ **Answer:** $b = 4$