

NAME: _____

A2.A.18: Evaluate logarithmic expressions in any base

1. 060125b, P.I. A2.A.18

The scientists in a laboratory company raise amebas to sell to schools for use in biology classes. They know that one ameba divides into two amebas every hour and that the formula $t = \log_2 N$ can be used to determine how long in hours, t , it takes to produce a certain number of amebas, N . Determine, to the *nearest tenth of an hour*, how long it takes to produce 10,000 amebas if they start with one ameba.

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[2] 13.3, and appropriate work is shown.

[1] Appropriate work is shown, but one computational or rounding error is made.

or [1] The correct value is substituted for n , and the equation is converted to exponential form, but it is not solved.

or [1] 13.3, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[1] incorrect procedure.