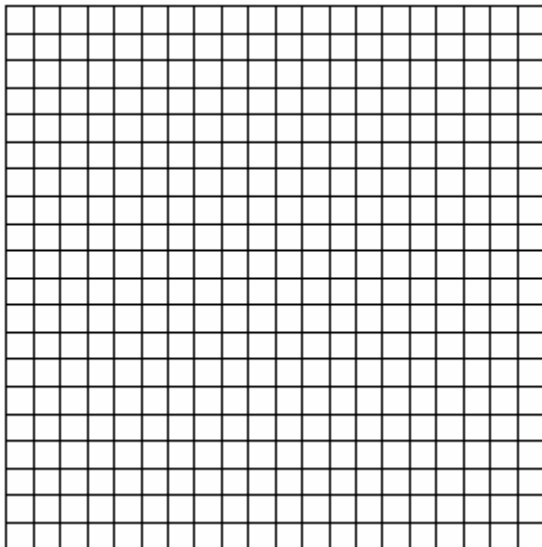


NAME: \_\_\_\_\_

*A2.A.54: Graph logarithmic functions, using the inverse of the related exponential function*

1. fall9927b, P.I. A2.A.54

Sketch the graph of the functions  $f(x) = 3^x$  and  $g(x) = \log_3 x$ . Considering the graphs, describe the relationship between  $f(x)$  and  $g(x)$ . Specify the domain and the range of  $g$ .



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[4] Correct graphs, relationship, domain, and range:

$f(x)$  and  $g(x)$  are reflections in the line  $y = x$

or  $f(x)$  and  $g(x)$  are inverses.

and Domain of  $g$ : The set of all real numbers such that  $x > 0$ .

and Range of  $g$ : The set of all real numbers.

[3] Correct graphs and relationship; incorrect domain and/or range.

or [3] Correct graphs, domain, and range; incorrect relationship.

or [3] One correct graph; correct relationship, domain, and range.

[2] Correct graphs; incorrect relationship, and domain and/or range.

or [2] Incorrect graphs; correct relationship and domain and range.

or [2] One correct graph and either relationship, or domain and range correct.

[1] No graphs, or incorrect graph with correct relationship.

or [1] No graphs, or incorrect graphs with correct domain and range.

or [1] One correct graph only.

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

[1] incorrect procedure.