

Your TA: \_\_\_\_\_

Seat #:  -

Math 105 TOPICS IN MATHEMATICS

MOCK QUIZ – IX

March 30 (Mon), 2015

Instructor: Yasuyuki Kachi

Line #: 52920.

ID #: \_\_\_\_\_

Name: \_\_\_\_\_

★ This is not an actual quiz. The actual “Quiz – IX” will be discreetly similar to this sheet. This sheet is to help you prepare for that quiz. The timing of the quiz will be either Wednesday, April 1st or Friday, April 3rd.

[I] (2pts) Fill in the boxes.

$$3^x = 7^{\boxed{\phantom{000}}}.$$

$$10^x = e^{\boxed{\phantom{000}}}.$$

[II] (2pts) Fill in the boxes.

$$2 = 6^{\boxed{\phantom{000}}}.$$

$$10 = e^{\boxed{\phantom{000}}}.$$

[III] (2pts) Write each of the following in the form

(a)  $\frac{1}{\log_5 3} = \log_{\boxed{\phantom{00}}} \boxed{\phantom{000}}.$  (b)  $\frac{1}{\log_{13} 24} = \log_{\boxed{\phantom{00}}} \boxed{\phantom{000}}.$

[IV] (4pts) Simplify

(1)  $\log_3 81 =$

(2)  $\log_{10} 10000 =$

(3)  $\log_5 \frac{1}{125} =$

(4)  $\log_4 \frac{1}{256} =$

[V] (2pts) Simplify

(1)  $\log_2 2^{\sqrt{2}} =$

(2)  $e^{\ln 5} =$

[VI] (2pts) Fill in the boxes

(1)  $\frac{\log_2 9}{\log_2 4} = \log_{\square} \square .$

(2)  $\frac{\log_3 10}{\log_3 e} = \ln \square .$

[VII] (8pts) (1)  $(\ln 75) - (\ln 25) = \ln \square .$

(2)  $6 \ln 2 = \ln \square .$

(3)  $\ln 125 = \square (\ln 5) .$

(4)  $\ln \sqrt[5]{729} = \frac{\square}{\square} (\ln 3) .$

(5) Simplify:  $e^{(\ln 3)+(\ln 17)} =$

(6) Simplify:  $e^{5(\ln 2)} =$

(7) Simplify:  $\ln 6^{\frac{1}{\ln 6}} =$

(8) Simplify:  $6^{\frac{1}{\ln 6}} =$