BOARD NOTES

18 FEBRUARY 2020

2A.5 (B) formulate exponential and logarithmic equations that model real-world situations, including exponential relationships written in recursive notation;
2A.5 (D) solve exponential equations of the form $y = ab^x$ where a is a nonzero real number and b is greater than zero and not equal to one and single logarithmic equations having real solutions;
2A.5 (E) determine the reasonableness of a solution to a logarithmic equation.

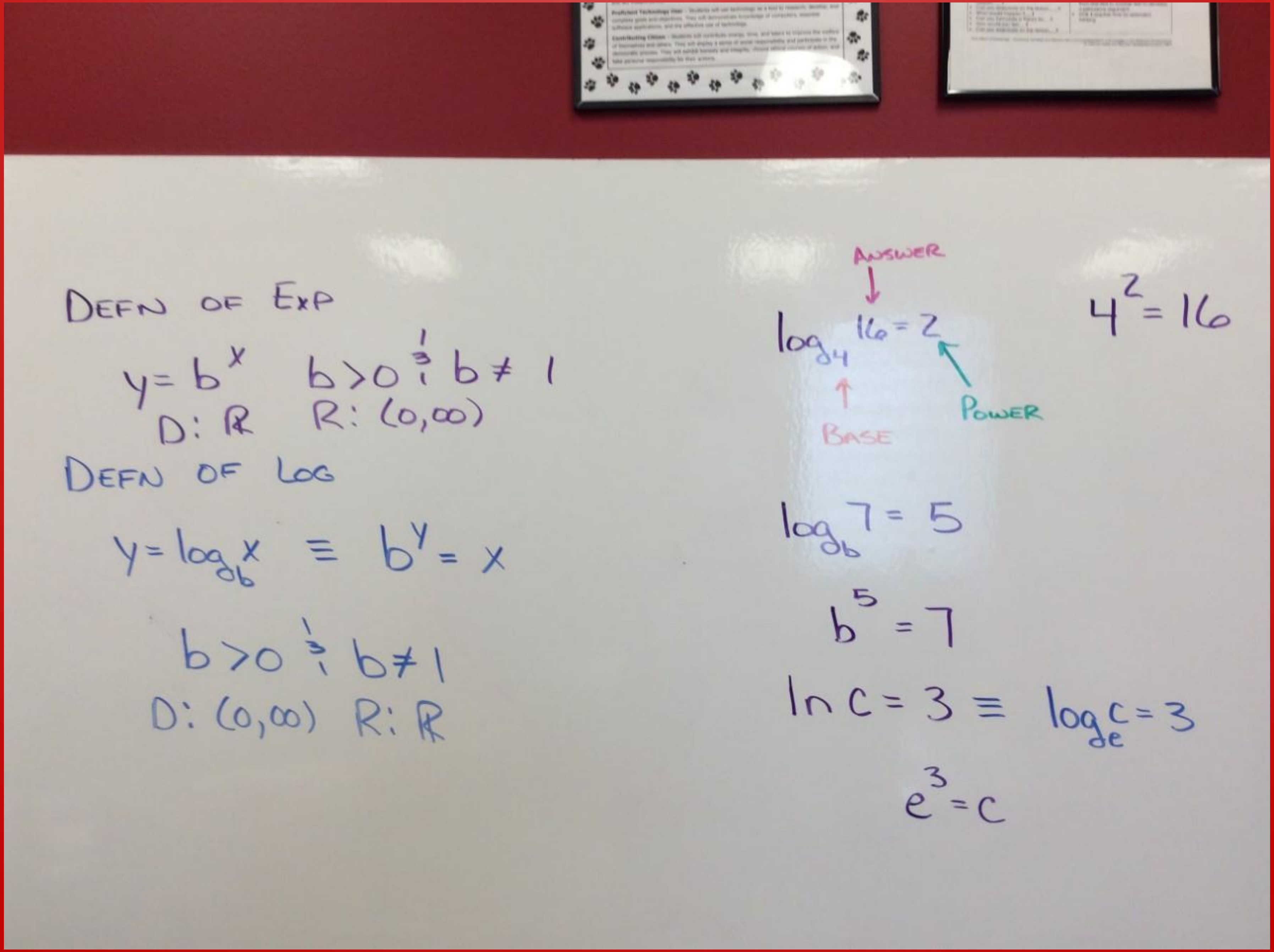
We will be able to solve logarithms by using the definition.

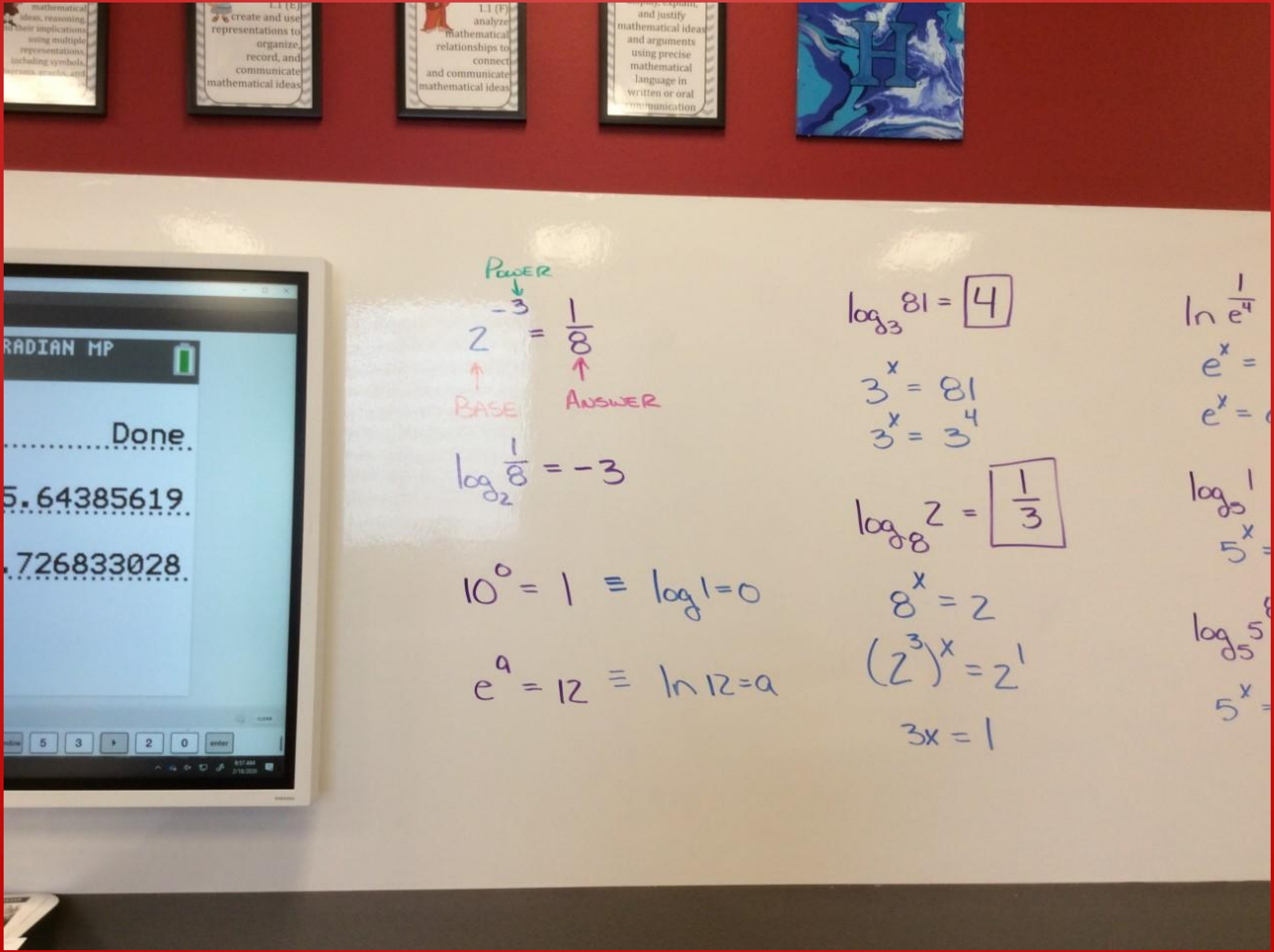
WHAT WE NEED:

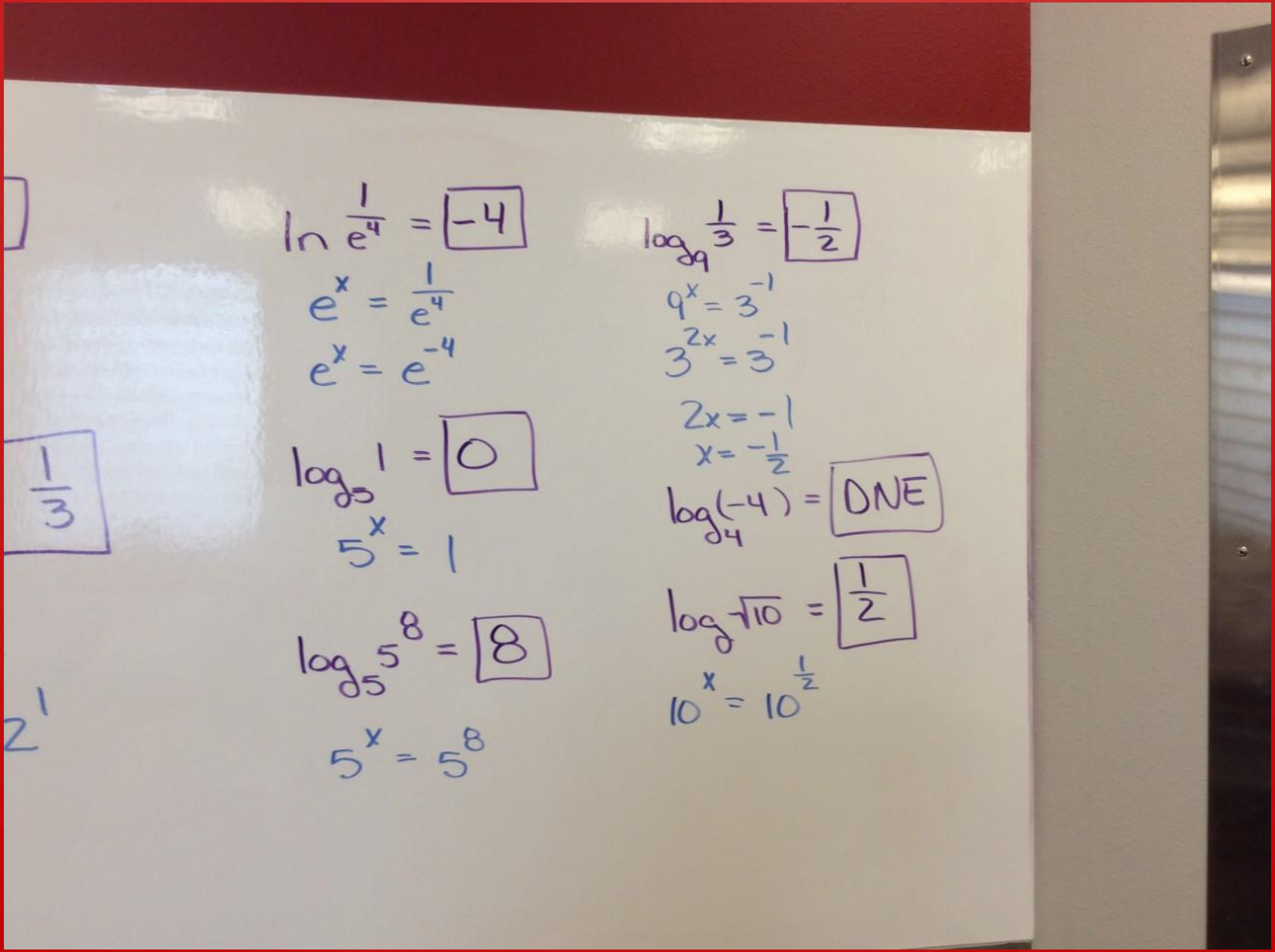
- TI-84
- Laws of Exponents
- Definition of Exponential
- Definition of Logarithmic

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVEN THE

- Equation


DEFN OF EXP
$y = b^x$ $b > 0$ & $b \neq 1$
D: $\mathbb{R}$ R: $(0, \infty)$
DEFN OF LOG
$y = \log_b x \equiv b^y = x$
$b > 0$ & $b \neq 1$
D: $(0, \infty)$ R: $\mathbb{R}$
ANSWER
$\log_4 16 = 2$
BASE
POWER
$4^2 = 16$
$\log_b 7 = 5$
$b^5 = 7$
$\ln c = 3 \equiv \log_e c = 3$
$e^3 = c$


create and use representations to organize, record, and communicate mathematical ideas
1.1 (F) analyze mathematical relationships to connect and communicate mathematical ideas
and justify mathematical ideas and arguments using precise mathematical language in written or oral communication
RADIAN MP
Done
5.64385619
.726833028
POWER
$2^{-3} = \frac{1}{8}$
BASE
ANSWER
$\log_2 \frac{1}{8} = -3$
$10^0 = 1 \equiv \log 1 = 0$
$e^a = 12 \equiv \ln 12 = a$
$\log_3 81 = \boxed{4}$
$3^x = 81$
$3^x = 3^4$
$\log_8 2 = \boxed{\frac{1}{3}}$
$8^x = 2$
$(2^3)^x = 2^1$
$3x = 1$


$\boxed{\frac{1}{3}}$
$\ln \frac{1}{e^4} = \boxed{-4}$
$e^x = \frac{1}{e^4}$
$e^x = e^{-4}$
$\log_5 1 = \boxed{0}$
$5^x = 1$
$\log_5 5^8 = \boxed{8}$
$5^x = 5^8$
$\log_9 \frac{1}{3} = \boxed{-\frac{1}{2}}$
$9^x = 3^{-1}$
$3^{2x} = 3^{-1}$
$2x = -1$
$x = -\frac{1}{2}$
$\log_4(-4) = \boxed{DNE}$
$\log \sqrt{10} = \boxed{\frac{1}{2}}$
$10^x = 10^{\frac{1}{2}}$

$$\log_2 50 = 5.64$$

$$\log_2 32 = \log_2(2^5) = 5$$

$$\log_2 64 = 6$$

$$\log_2 32 < \log_2 50 < \log_2 64$$