

# HW 71

P415

5. a)  $4^3 = 64 \checkmark$

b)  $4^{-3} = 64 \times$

7. a)  $3e^{e^{25}} = 75 \times$

b)  $3e^{\ln 25} = 75 \checkmark$

c) yes

15.  $2^{-x} = 2^5$

$x = -5$

16.  $4^{-x} = 4^3$

$x = -3$

17.  $\ln x = \ln 2$

$x = 2$

18.  $\ln x = \ln 5$

$x = 5$

19.  $e^x = 2$

$\ln 2 = x$

$x \approx 0.69$

20.  $\ln 4 = x$

$x \approx 1.39$

21.  $e^{-1} = x$

$x \approx 0.37$

22.  $10^{-2} = x$

$\frac{1}{100} = x$

23.  $4^3 = x$

$x = 64$

24.  $5^{1/2} = x$

$\sqrt{5} = x$

32.  $-x^2 = x^2 - 2x$

$0 = 2x^2 - 2x$

$0 = 2x(x-1)$

$x = 0, x = 1$

33.  $3^x = 5$

$\log_3 5 = x$

$x = \frac{\log 5}{\log 3}$

$x \approx 1.465$

34.  $5^x = 10$

$\log_5 10 = x$

$x = \frac{\log 10}{\log 5}$

$x \approx 1.723$

35.  $e^x = 5$

$\ln 5 = x$

$x \approx 1.609$

36.  $e^x = 22.75$

$\ln 22.75 = x$

$x \approx 3.125$

37.  $e^x = 28$

$x = \ln 28$

$x \approx 3.332$

38.  $6^x = 37$

$\log_6 37 = x$

$\frac{\log 37}{\log 6} = x$

$x \approx 2.015$

39.  $\log_3 80 = 2x$

$2x = \frac{\log 80}{\log 3}$

$2x \approx 3.989$

$x \approx 1.994$

→

$$89. \ln 5x = 10/3$$

$$e^{10/3} = 5x$$

$$\frac{e^{10/3}}{5} = x$$

$$\boxed{x \approx 5.606}$$

$$105. 2x - 3 = x + 4$$

$$\boxed{x = 7}$$

$$106. 3x + 4 = x - 10$$

$$2x = -14$$

$$x = -7$$

$$\boxed{\text{NO SOLUTION}}$$

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