Algebra 2
Review 7.1-7.4
Quiz today 7.3-7.4
MCT Tues. 7.1-7.4

Plan your time (finish on time)

7-3 Logarithms and Logarithmic Functions

25. Write $\log_2 \frac{1}{16} = -4$ in exponential form.

26. Write $10^2 = 100$ in logarithmic form.

Evaluate each expression.

27. $\log_4 256$

28. $\log_2 \frac{1}{8}$

Graph each function.

29. $f(x) = 2 \log_{10} x + 4$ (one at most)

7-4 Solving Logarithmic Equations and Inequalities

Solve each equation or inequality.

31. $\log_4 x = \frac{3}{2}$

32. $\log_2 \frac{1}{64} = x$

33. $\log_4 x < 3$

34. $\log_5 x < -3$

35. $\log_9 (3x - 1) = \log_9 (4x)$

37. $\log_3 (3x + 4) \leq \log_3 (x - 2)$

Write on same base

Example 2

Solve $4^{3x} = 32^{x-1}$ for x.

$$(2^2)^{3x} = (2^5)^{x-1}$$

$$6x = 5x - 5$$

$$-5x \quad -5x$$

$$x = -5$$

20. $64^{3n} = 8^{2n-3}$

$(8^2)^{3n}$

$6n = 2n - 3$

$-2n \quad -2n$

$\frac{4n}{4} = \frac{-3}{4}$

22. $9^{x-2} > \left(\frac{1}{81}\right)^{x+2}$

$9^{x-2} > \left(9^{-2}\right)^{x+2}$

$x-2 > -2x-4$

$+2x \quad +2 \quad +2x \quad +2$

$\frac{3x}{3} > -\frac{2}{3}$

(0, 5000)

24. BACTERIA A bacteria population started with 5000 bacteria. After 8 hours there were 28,000 in the sample. (8, 28,000)

a. Write an exponential function that could be used to model the number of bacteria after x hours if the number of bacteria changes at the same rate.

$y = 5000(1.24)^t$

b. How many bacteria can be expected in the sample after 32 hours?

$y = a(b)^x$

$28{,}000 = 5000(B)^8$

$(5.6)^{\frac{1}{8}} = (B^8)^{\frac{1}{8}}$

$1.24 = B$

$y = 5000(1.24)^{32}$

488049.6

≈ 488050

p 484 1-23o due Mon

p. 484 2- e due Tues.