WARM UP

State the domain and range in interval notation.

1) $y = \log(x+4)$ D $(-4,\infty)$ R $(-\infty,\infty)$

2) $y = 3(2)^x$ D $(-\infty,\infty)$ R $(0,\infty)$

3) Write as a single log: $3\log m^5 - 2\log m$ $= \log m^{15} - \log m^2$ $= \log\left(\frac{m^{15}}{m^2}\right) = \log(m^{13})$

4) Expand the log: $\log_5 2m^3\sqrt{n}$ $\log_5 2 + 3\log_5 m + \frac{1}{3}\log_5 n$

5) Solve for x.

$\log_6 36 = x$ $x = 2$

$\log_3 x = -3$ $x = \frac{1}{27}$ $3^{-3} = x$

$\log x = 2$ $10^2 = x$ $100 = x$

6) Evaluate:

$0 - 3 = -3$

$\frac{1}{2}\log_6 1 - 3\log_6 6$ $\log_6 1 = 0$ $\log_6 6 = 1$ $-3 \cdot 1 = -3$

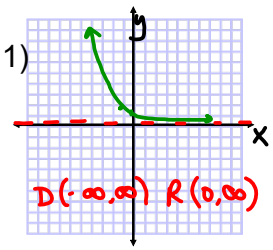
$= \log_6 \frac{1}{6^3} = \log_6 6^{-3}$

7) Instagram users are increasing at a rate of 1.5% per year, If there were 1.2 million users at the beginning of 2012, how many users will there be at the start of 2020?

$y = 1.2(1+1.5)^8$ $y = 1.2(1+.015)^9$

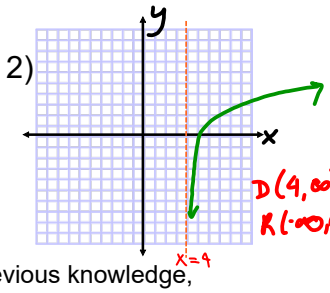
Using the graph, state the domain and range in interval notation.

1)



D $(-\infty,\infty)$ R $(0,\infty)$

2)



D $(4,\infty)$
R $(-\infty,\infty)$

Using a sketch or your previous knowledge, state the domain and range in interval notation.

Mar 14-9:51 AM

$\log_a mN = \log_a m + \log_a N$

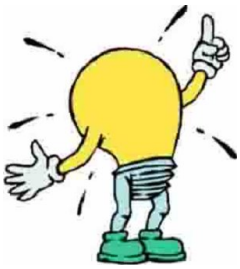
$\log_a \frac{m}{N} = \log_a m - \log_a N$

$\log_a m^x = x\log_a m$

8.5 Exponents and Log Equations

How can we solve exponential equations when the bases are not the same?

For example:



$$64^{3x} = 4^{5x+9}$$

$(4^3)^{3x} = 4^{5x+9}$ multiply

$4^{9x} = 4^{5x+9}$

$9x = 5x + 9$

$4x = 9$

$x = \frac{9}{4}$

Mar 11-1:17 PM

What would be the common base?

$$125^{x-2} = \left(\frac{1}{5}\right)^5$$

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

$5^{3x-6} = 5^{-5}$

$3x - 6 = -5$

$3x = 1$

$x = \frac{1}{3}$

Feb 14-9:48 AM

Today we will review 8.5Pt1 Video Lesson
Calculator is needed!

Mar 11-1:17 PM

Solve $7^{3x} = 30$

pull for answer

Pull

1 Pull

2 Pull

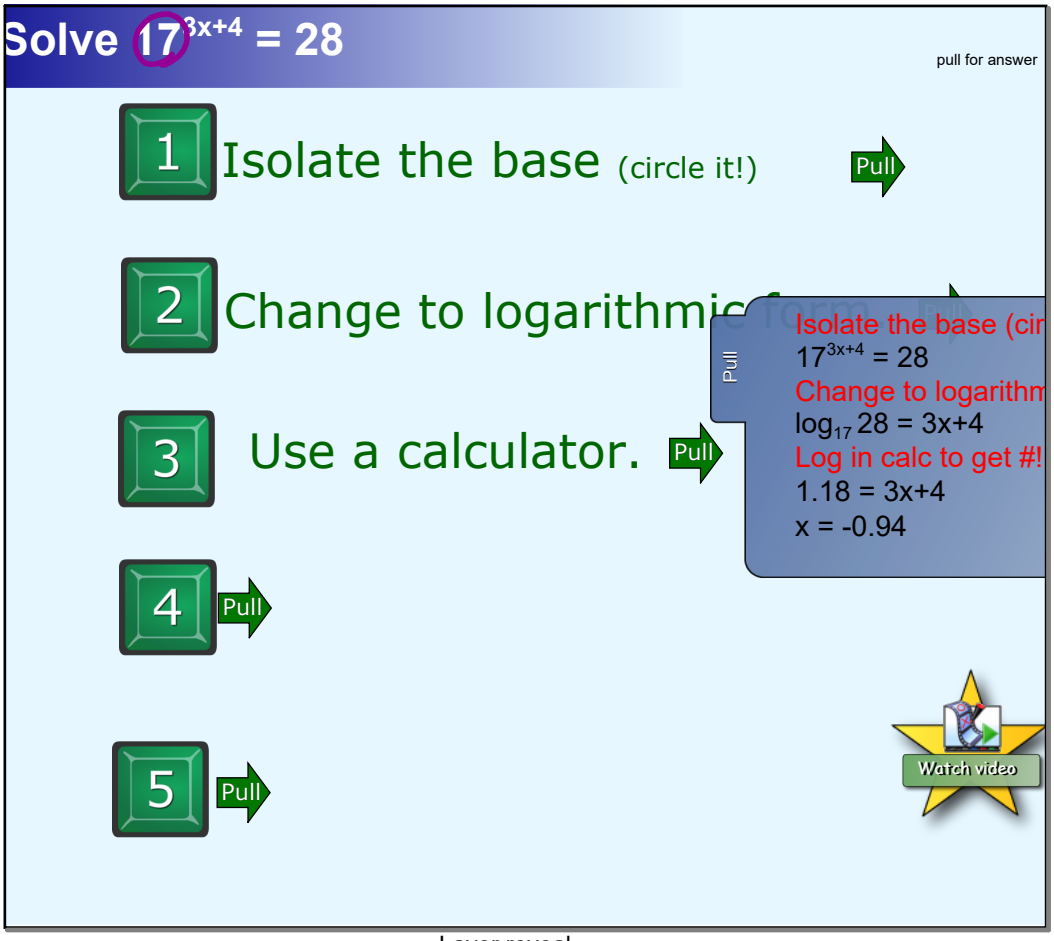
3 Pull

4 Pull

5 Pull

Watch video

Layer reveal



Layer reveal

How do you solve these problems?

$5^{2x-13} + 5 = 22$

$-5 \quad -5$

$5^{2x-13} = 17$

$\log_5 17 = 2x-13$

$1.76 = 2x-13$

$+13 \quad +13$

$\frac{14.76}{2} = \frac{2x}{2}$

7.38

$2 - 14^{3x} = -130$

$-2 \quad -2$

$\frac{-14^{3x}}{-1} = \frac{-132}{-1}$

$14^{3x} = 132$

$\log_{14} 132 = 3x$

.62

Mar 7-2:29 PM

Solve for x to two decimals.

What do you first? second?

$$2 \cdot 6^{2x-8} - 1 = 11$$

$$-7\left(7^{3x-5}\right) = -84$$

$7^{3x-5} = 12$

$\log_7 12 = 3x-5$

2.09

Mar 7-2:29 PM

GO COUGARS!

EVERGREEN COUGARS

HOMEWORK

Complete the 16 problems in a jig saw puzzle/google slides, attached in classroom.

You must submit the puzzle and show ALL YOUR WORK in your notebook to receive full credit.

Mar 14-2:51 PM

EXTRA SLIDES

Feb 17-11:15 AM

GO COUGARS!

TO DO:

Get a colored pencil and a partner.
Complete the Log Equation Maze and have me check it.

Then complete the 16 problems in a jig saw puzzle/google slides, attached in classroom (you started it yesterday).

You must submit the puzzle and show ALL YOUR WORK in your notebook to receive full credit. I'll be able to check that at the end of the period.

YOU COMPLETE ALL OF THIS = NO HW OVER LONG WEEKEND

Mar 14-2:51 PM

CHECK HW8.4 Part 2 p. 457

31. 9 dB **32.** 13 dB **33.** -2 **34.** 1

35. 6 **36.** 2 **37.** 2 **38.** 1

39. 1 **40.** -2 **41.** 1

73. $\log_3 \sqrt[4]{2x}$ **74.** $\log_x \dfrac{2\sqrt{y}}{z^3}$

75. $\log \frac{27}{2}$ **76.** $\log_4 \dfrac{m^x n^{1/y}}{p}$

79. $3 \log 2 + \frac{3}{2} \log x - 3 \log 5$

80. $3 \log m - 4 \log n + 2 \log p$

81. $\log 2 + \frac{1}{2} \log 4 + \frac{1}{2} \log r - \log s$

82. $\frac{1}{2} \log_b x + \frac{2}{3} \log_b y - \frac{2}{5} \log_b z$

83. $\frac{5}{2} \log_4 x + \frac{7}{2} \log_4 y - \log_4 z - 4 \log_4 w$

84. $\frac{1}{2} \log (x^2 - 4) - 2 \log (x + 3)$

Feb 3-8:24 AM

Attachments

jnvu6kq1.bmp