Transforming Log Graphs (8.2)

p390 day 2

Sleep

what is going on

why it is necessary

flipping the paradigm

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17. The growth of a new social networking site can be modelled by the exponential function $N(t) = 1.1^t$, where N is the number of users after t days.
   a) Write the equation of the inverse.
   b) How long will it take, to the nearest day, for the number of users to exceed 1 000 000?

8.2) p390 day 2

-15, 17, 19

$1\,000\,000 = 1.1^t$

$\log_{1.1} 1\,000\,000 = t$

Quiz tomorrow

15. Determin
$y = \log_7$ (

19. The formula for the Richter
of an earthquake is $M = \log$
A is the amplitude of the g
and A_0 is the amplitude of
earthquake. In 1985, an ear
magnitude 6.9 on the Richt
recorded in the Nahanni re
Northwest Territories. The
earthquake in Saskatchewa
1982 near the town of Big
magnitude of 3.9 on the Ric
many times as great as the
of the Saskatchewan earthq
of the Nahanni earthquake?

Transforming Log Graphs (8.2)

p390 day 2

Let's talk a bit about Logarithmic scales.

Richter pH

Increasing by 1 is actually 10 times more intense

5 10^5
4 10^4 ×10

3.6

70
60 dB ×10
50 ×10

decibels

Increasing by 10 is 10 times more intense

what is making noise in this room?

Transforming Log Graphs (8.2)

p390 day 2

ex2: The strength of a filter shade for welding is modeled by

$$N = \frac{7(-\log T)}{3} + 1$$

N is the filter number
T is the percent of visible light that passes through the filter

What percent passes through a filter 12 (for arc welding)?

$12 = \frac{7(-\log T)}{3} + 1$

$11 = \frac{7(-\log T)}{3}$

$4.71 = -\log T$

$-4.71 = \log T$

$10^{-4.71} = 10^{\log T}$

$10^{-4.71} = T$

$T = 0.000019$

12

12.

$7.0 = 0.67 \log(0.36x) + 1.46$

$5.54 = 0.67 \log(0.36x)$

$8.268 = \log(0.36x)$

$10^{8.268} = 0.36x$

$185\,000\,000 = 0.36x$

575 million = x

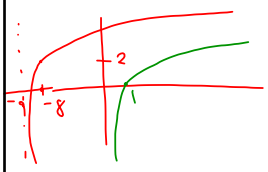
Transforming Log Graphs (8.2)

p390 day 2

ex3: Describe the transformations and sketch:

$y = \log_3(x+9) + 2$

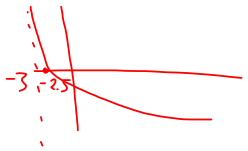
9 left 2 up



$y = -\log(2x+6)$

$2(x+3)$

vert refl. 3 left
h comp 2

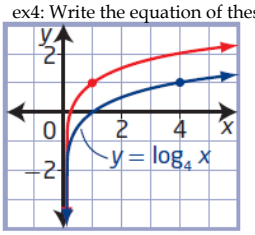


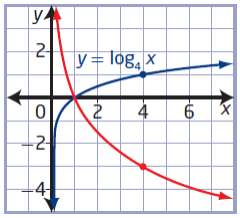
$y = a\log_c b(x-h) + k$

5ac
just describe & sketch

Transforming Log Graphs (8.2) p390 day 2

ex4: Write the equation of these graphs.





Transforming Log Graphs (8.2) p390 day 2

hw: p390#6abc, 9, 14

Quiz tomorrow

Attachments

decibels short.docx