p. 32-33 Solving Log Equations by Rewriting 7.4

Fill in the Blanks

2.
$$3^{-1} = \frac{1}{9}$$

4.
$$10^{\boxed{3}} = 1,000$$

p. 33

Exponential equations can be rewritten as logarithm equations

What is a logarithm?

Exponential Form

$$b^x = y$$

Logarithmic Form

$$\log_b y = x$$

Ex:
$$4^2 = 16 \longrightarrow \log_4 16 = 2$$

Exponential Form

$$b^x = y$$

Logarithmic Form

$$\log_b y = x$$

$$4^2 = 16 \iff \log_4 16 = 2$$

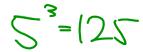
Rewrite in exponential form.

1)
$$\log_5 625 = 4$$

2)
$$\log_2 \frac{1}{8} = -3$$

$$2^3 = 8$$

3)
$$\log_5 125 = 3$$



Rewrite in logarithmic form.

4)
$$10^4 = 10,000$$

5)
$$6^{-2} = \frac{1}{36}$$

$$36 = -2$$

Solve each equation by rewriting to exponential for p. 32 Note: your equation must first be in logarithm form.

1)
$$\log_{3} x = 5$$

2) $\frac{4 \log_{2} x}{4} = -\frac{12}{4}$

3) $= \times$

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2) $\frac{4 \log_{2} x}{4} = -\frac{12}{4}$

2) $\frac{12}{4} = -\frac{12}{4}$

3) $\log_{5}(x + 10) = 2$

4) $\frac{8 \log_{10}(x - 400)}{8 \log_{10}(x - 400)} = \frac{9}{3}$

10) $\frac{12}{5} = \frac{1}{8}$

5)
$$\log_{6}(2x - 1) = 2$$

 $6 = 2x - 1$
 $36 = 2x - 1$
 $+1$
 $37 = 2x$
 $18.5 = x$

6)
$$\frac{4\log_2(2x)}{4} = \frac{16}{4}$$

 $|0|_2(2x) = 4$
 $2^4 = 2x$
 $\frac{16}{2} = \frac{2x}{2}$
 $8 = x$

Homework: Rewriting and Simple Solving