Sec 10-2 Continued

Evaluate

$\log_5 5^3 = x$

$5^x = 5^3$

$x = 3$

* property: $\log_b b^x = x$

Evaluate: $\log_9 9^5 = 5$

evidence: $9^x = 9^5$

Evaluate: $6^{\log_6(2x+5)} = x$ answer

answer: $2x + 5$

property: $b^{\log_b x} = x$

ex.) $5^{\log_5 25} = 25$

Finally, if you have an equation with the same Log bases on both sides, you can simply set the number parts equal. If $\log_b x_1 = \log_b x_2$, then $x_1 = x_2$

ex.) $\log_{10}(t^2 - 6) = \log_{10} t$

$$t^2 - 6 = t$$
$$-t \quad -t$$
$$t^2 - t - 6 = 0$$
$$(t - 3)(t + 2) = 0$$

$t = 3$ ~~$t = -2$~~ discard neg.

ex.) $\log_3(3x - 5) \geq \log_3(x + 7)$

$$3x - 5 \geq x + 7$$
$$-x + 5 \quad -x + 5$$
$$2x \geq 12$$
$$x \geq 6$$

Assignment: page 609 # 22-47 all :)