Section 6.2
I can identify appropriate methods to solve logarithmic equations.

Methods:
By converting to exponential form
By condensing an expression
By taking a log of both sides
By changing the bases

Properties of Logarithms:

$a^x = a^y$ *if only if* $x =$ _____

$\log_b x = \log_b y$ *if and only if* _____

Example:
If $\log_3 x = \log_3 8$ then x = _____

$\log_7(6x - 16) = \log_7(x - 1)$

$\log_9(x^2 - 4x) = \log_9(3x - 10)$

You try ☺
$\log_3(x - 5) = \log_3(3x - 25)$

$\log_7(x^2 - 4) = \log_7(-x + 2)$

Since $a^0 = 1$ & $a^1 = a$ $\log_b x = y$ *and* $b^y = x$

_____ _____ _____ Or _____

Solve:
$\log_8(x - 5) = \frac{2}{3}$

$\log_4(5x + 1) = 2$

You try ☺
$\log_{16}(x + 12) = \frac{3}{2}$

$\log_2(x + 3) = 4$

Property of Inequality for Logarithmic Functions:

Algebra: $if\ b > 1, x > 0, and\ log_b x > y, then$ _____

Example: $log_2 2x > 2$ $log_2(8x + 5) > log_2(6x + 19)$

You try ☺

$log_4 8x > 3$ $log_3(8x + 3) > log_3(5x + 12)$

Algebra: $if\ b > 1, x > 0, and\ log_b x < y, then$ _____

Example: $log_2(3x + 1) < 4$ $log_3(3x - 4) < log_3(x + 1)$

You try ☺

$log_3(x + 3) < 3$ $log_2(3x - 4) < log_2(2x + 7)$