

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples	
<i>Logarithmic Equations</i> <b>TYPE I: LOG = LOG</b>	①	<b>CONDENSE</b> each logarithm.
	②	<b>Use the One-to-One Property:</b> If $\log_b m = \log_b n$ , then
	③	<b>SOLVE</b> and <b>CHECK FOR EXTRANEIOUS SOLUTIONS.</b>
	1. $\log_5(5x + 9) = \log_5(6x)$	2. $\log_2(1 - 4n) = \log_2(2n + 43)$
	3. $\log_9(6 - 3w) = \log_9(-2w)$	4. $\log(y + 5) + \log 4 = \log 72$
	5. $3 \cdot \log_7 4 = \log_7(4a - 8)$	6. $\log_4 68 - \log_4 4 = \log_4(3n + 11)$
	7. $\frac{1}{2} \cdot \log_6 25 = \log_6(23 - 4w)$	8. $\log_3(2p - 5) = 2 \cdot \log_3 6 - \log_3 4$

	<b>9.</b> $\log_4(m^2) = \log_4(18 - 7m)$	<b>10.</b> $\log 2 + \log(k^2) = \log(k^2 + 16)$
<b>TYPE 2: LOG = NUMBER</b>	<b>①</b> <b>CONDENSE</b> and <b>ISOLATE</b> the logarithm.	
	<b>②</b> Write the equation in <b>EXPONENTIAL FORM</b> .	
	<b>③</b> <b>SOLVE</b> and <b>CHECK FOR EXTRANEIOUS SOLUTIONS</b> .	
	<b>11.</b> $\log_2(x - 4) = 6$	<b>12.</b> $\log_3(4x + 8) - 7 = -3$
	<b>13.</b> $\log(2x) + \log(x - 5) = 2$	<b>14.</b> $2 \cdot \log x - \log 4 = 2$
	<b>15.</b> $\log_6(x + 9) + \log_6 x = 2$	<b>16.</b> $\log(x - 3) + \log x = 1$