p. 40-41 One to One Day 2 Sec: 7.5

p. 40

Warm up: Simplify the exponents (glue in half sheet):

$2^2 = 4$	3^2	4^2	5^2	6^2
$2^3 = 8$	3^3	4^3	5^3	6^3
2^4	3^4	4^4	5^4	6^4
2^5	3^5	4^5	5^5	$6^5 = 7776$

Homework: *What questions do you have?*

Solving Log/Exp Equations - Mixed Practice

One-to One property of Exponential Functions:

If 2 powers with the same base are equal, their exponents are equal.

$b^x = b^y$, then $x = y$

If the bases are not the same, we may be able to rewrite one of the sides so that they do match.

p. 41

1. $(3)^{3x} = (9)^{x+1}$

$(3)^{3x} = (3^2)^{x+1}$

$3x = 2\cdot(x+1)$

$3x = 2x+2$

$-2x \quad -2x$

$x = 2$

2. $(2)^{5x} = (8)^{3x+4}$

$(2)^{5x} = (2^3)^{3x+4}$

$5x = 3\cdot(3x+4)$

$5x = 9x+12$

$-4x = 12$

$x = -3$

p. 41

3. $(256)^{2x-2} = (16)^{2x}$

$(4^4)^{2x-2} = (4^2)^{2x}$

$4(2x-2) = 2\cdot 2x$

$8x-8 = 4x$

$4x = 8$

$x = 2$

4. $(3)^{5x+4} = (81)^{11}$

$(3)^{5x+4} = (3^4)^{11}$

$5x+4 = 4\cdot 11$

$5x+4 = 44$

$5x = 40$

$x = 8$

p. 40

5. $(2)^{4x+12} = (512)^{8}$

$(2)^{4x+12} = (2^9)^8$

$4x+12 = 9 \cdot 8$

$4x+12 = 72$

$4x = 60$

$x = 15$

6. $(36)^{2x+4} = (1296)^{4x+11}$

$(6^2)^{2x+4} = (6^4)^{4x+11}$

$2(2x+4) = 4(4x+11)$

$4x+8 = 16x+44$

$8 = 12x+44$

$-36 = 12x$

$x = -3$

Practice:

Solving Exponential Equations worksheet

Finish Mixed Practice packet