Algebra 1

Chapter 7
Section 7-1

Exponents

x	2^x	10^x
3	8	1000
2	4	100
1	2	10
0	1	1
-1	$1/2$	$1/10$
-2	$1/4$	$1/100$

Exponent Rules

For any non-zero number *a* taken to the zero power:

$$a^0 = 1$$

For any non-zero number *a* and positive number *b*:

$$a^{-b} = \frac{1}{a^b}$$

Simplifying Powers

$$4^{-3} = \frac{1}{4^3} = \frac{1}{64}$$

$$(-11)^{-2} = \frac{1}{11^2} = \frac{1}{121}$$

How does this differ from -11^{-2} ?

Simplifying Exponent Expressions

$$a^{-7} = \frac{1}{a^7}$$

$$2h^{-3}k^4 = \frac{2k^4}{h^3}$$

$$\frac{1}{rs^{-1}} = \frac{s}{r}$$

Evaluating Exponent Expressions

If b = 3 , and d = -2 $d^{-4}b^0 = (-2)^{-4}(3)^0 = \frac{1}{16}$

If v = 3 , and w = 2 $5v^{-3}w^2 = 5(3)^{-3}(2)^2 = \frac{20}{27}$

If p = 3 , s = -8 , and t = 10 $\frac{t}{p^0s^{-1}} = \frac{10}{(3)^0(-8)^{-1}} = -80$