23.10.15

Algebra

Powers of Monomials *Section 6.7* Pg. 318-320	**Classwork:** p. 320: 1-9, 16, 18, 19, 21, 24, 28, 31, 34, 37, 39, 43, 48, 51, 55 **Homework:** p. 320: 10, 11,12, 17, 23, 26, 27, 30, 33, 35, 36, 40, 42, 44, 45, 47, 52, 54

Power b^x : Powers of Monomials eg $(3x^2y)^3$ — exponent affects every factor inside the monomial.

$x^2 \cdot x^3 = x^{2+3}$

$(x^2)^3 = x^{2\times 3}$ raise a power to a new exponent ⇒ multiply exponents

$= (3)^3(x^2)^3(y)^3$

$= 27x^6y^3$

Simplify.

1. $(x)^2 = x^2$
2. $(a)^3 = a^3$
3. $(p)^5 = p^5$
4. $(n^2)^2 = n^4$
5. $(-t^3)^2 = +t^6$
6. $(-1y^2)^3 = (-1)^3 \cdot (y^2)^3 = -y^6$
7. $(x^2)^3 = x^6$
8. $(y^3)^2 = y^6$
9. $(m^2)^2 = m^4$

16. $(-s^{10})^2 = +s^{20}$

18. $-(-b^0)^3 = -(-1)^3$
$= -(-1) = +1$

19. $(xy)^2 = x^2y^2$

21. $(-xy)^2 = +x^2y^2$
$(-1)^2(x)^2(y)^2$

34. $(-c^3d^4)^2$
$= (-1)^2(c^3)^2(d^4)^2$
$= +c^6d^8$

37. $(2x^2)^3 = (2)^3(x^2)^3$
$= 8x^6$

39. $(4x^4)^2$ $= (4)^2 (x^4)^2$

$= 16x^8$

43. $(-2n^2)^3$ $= (-2)^3 (n^2)^3$

$= -8n^6$

48. $-(3xy^0)^2$

$= -(3)^2 (x)^2 (1)^2$

$= -9x^2$

51. $(2x^2y^3)^2(x^2y)$

$= \left((2)^2(x^2)^2(y^3)^2\right)(x^2y)$

$= (4x^4y^6)(x^2y^1)$

$= 4x^6y^7$

power x power (with same base) $\Rightarrow$ add exponents

55. $(10abc)^2(-2a^2bc)$

$= (100a^2b^2c^2)(-2a^2bc)$

$= -200a^4b^3c^3$