Name:_____ Date:_____

Homework sheet: Alg2H
Exponents + Formulas + review

Formulas:

1. Page 71, questions:

a. $A = \frac{1}{2}bh$, for b

$2A = bh$

$\frac{2A}{h} = b \Rightarrow \boxed{b = \frac{2A}{h}}$

b. $P = \frac{3}{5}(C+10)$, for C

$\frac{5}{3}P = C+10 \Rightarrow \boxed{C = \frac{5}{3}P - 10}$

f. $x = G - Gr^2p$, for G

$x = G(1-r^2p)$

$\frac{x}{(1-r^2p)} = G \Rightarrow \boxed{G = \frac{x}{1-r^2p}}$

Page 72, question 21:

$A = \frac{1}{2}ha + \frac{1}{2}hb$, for h.

$A = h(\frac{1}{2}a + \frac{1}{2}b)$

$\frac{A}{\frac{1}{2}a + \frac{1}{2}b} = h \Rightarrow \boxed{h = \frac{A}{\frac{1}{2}(a+b)}}$

Exponents:

2. Page 58, questions:

49. $(7x^3y^{-1})(-2x^{-4}y) =$

$= (7\cdot(-2))(x^3\cdot x^{-4})(y^{-1}\cdot y)$

$= -14 \cdot \frac{1}{x} = \boxed{\frac{-14}{x}}$

51. $-\frac{54x^{-5}y^4}{18\cdot x^3\cdot y^{-1}} =$

$-\frac{54}{18}\cdot\frac{x^{-5}}{x^3}\cdot\frac{y^4}{y^{-1}} =$

$-3\cdot\frac{1}{x^8}\cdot y^5 = \boxed{\frac{-3y^5}{x^8}}$

52. $(-3x^2y^3)^4 =$

$(-3)^4(x^2)^4(y^3)^4 = \boxed{81x^8y^{12}}$

53. $(-2x^3)^{-3} = \frac{1}{(-2x^3)^3} =$

$= \frac{1}{(-2)^3\cdot(x^3)^3} = \boxed{\frac{1}{-8x^9}}$

Problems denoted with ** mark are taken from Exeter Phillips Academy (NH) math curriculum.

3. (Book1 60**) Solve

$$\frac{2}{3}(3x+14) = 7x+6,$$

by first multiplying both sides of the equation by 3,before applying the distributive property.

$2\cdot(3x+14) = 21x+18$ → $28-18 = 21x-6x$

$6x+28 = 21x+18$ → $10 = 15x$

$x = \frac{10}{15}$ → $\boxed{x = \frac{2}{3}}$

check $32 = 32$

4. (Book1 62**) In each of the following, use appropriate algebraic operations to remove the parentheses and combine like terms. Leave your answers in a simple form

(a) $x(2x) + 2(x+5)$

$\boxed{2x^2 + 2x + 10}$

(b) $2x(5x-2) + 3(6x+7)$

$10x^2 - 4x + 18x + 21 = \boxed{10x^2 + 14x + 21}$

(c) $5m(3m-2n) + 4n(3m-2n)$

$15m^2 - 10mn + 12nm - 8n^2 = \boxed{15m^2 + 2mn - 8n^2}$

5. (Book1 59**) Simplify each of the following:

(a) the sum of $6x+2$ and $-8x+5$;

$(6x+2) + (-8x+5) = \boxed{-2x+7}$

(b) the result of subtracting $5x - 17$ from $8x + 12$;

$(8x+12) - (5x-17) = 8x + 12 - 5x + 17 = \boxed{3x+29}$

(c) the product of $7x$ and $4x - 9$.

$7x\cdot(4x-9) = \boxed{28x^2 - 63x}$