First name: _____ Last name: _____ Student ID: _____

Algebra Homework

Basic problems:

1. Observe each question and rewrite it correctly on the right side.

1) $\frac{n+5}{30} = 40$ $n + 5 = 30 \times 40$ $n = 1195$		2) $80k - 39 = 1$ $80k = 1 + 39 = 40$ $k = \frac{40}{80}$	
3) $99 = -75 + x$ $99 - 75 = x$ $24 = x$		4) $6h - 15 = 45$ $45 + 15 = 60$ $h = 10$	

2. Complete by evaluating each expression for $a = 5, b = 2$. Show Work!

1. $a^2 + b$	2. $43a + b^2$	3. $(a - 3)^3 - 2b$
4. $(b + 4)^2 - a^2$	5. $\frac{a^3 - 12b - 1}{2b}$	6. $\frac{6(a-b)}{b-a} + \frac{a}{b}$

3. Translate each sentence into an equation.

1. Fifty-three plus four times c is as much as 21.	
2. The sum of five times h and twice g is less than 23.	
3. One quarter of the difference between j and 59 is 40.	
4. Three plus the quotient of w and 66 is greater than 32.	

4. Solve each equation. Show Work.

1) $4x + 1 = 2x + 7$	2) $10x - 6 = 7x + 9$	3) $7x - 7 = -x + 1$
4) $-4 = \frac{r}{20} - 5$	5) $\frac{3x-6}{4} = \frac{5+4x}{5}$	6) $75 = -5(-f - 5) + 5f$

5. Complete the table of values.

1. Rule: $y = \frac{x^2}{4}$

Input	**x**	-2	-1	0	1	2	3
Output	**y**						

2. Rule: $y = -\frac{2}{3}x + 6$

Input	**x**	-9	-6	-3	0	3	6	9
Output	**y**							

6. Write an equation then solve for each problem. Write "let" statements.

1. The sum of three consecutive numbers is 75. Name the numbers.
2. Name two numbers if one number is 3 more than twice another, and their sum is 57.

Word problems: Algebra is mandatory to solve all questions.

1. An orchestra has 30 musicians. Twelve of them can play flute and twelve of them can play trumpet. Six of them can play both. How many of the musicians cannot play either of these instruments?

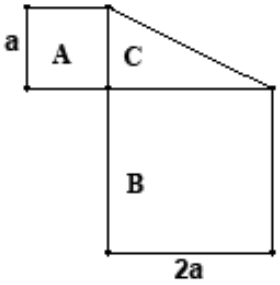
2. Alphonse has three times as many marbles as Beatrice. If Alphonse gave 15 marbles to Beatrice, then he would have twice as many as she would have. How many marbles in total must Alphonse give to Beatrice so that they each have the same number of marbles?

3. If $b^2 + d^2 = 300$, the sum of b and d is 20, what is the value of bd?

4. Alice did three tests. Her second test mark was twice the first one's and the third mark was three times the second test. The average mark for all three tests was 60. What was the second mark?

5. Tariq has a basket of fruit containing some apples and some oranges. One third of the fruit are oranges. He gives away 40 apples and 10 oranges and finds that he now has an equal number of apples and oranges. How many apples did Tariq originally have in the basket?

6. Let A, B and C be the areas of the two squares and of the right triangle. The lengths of the sides of the small and large squares are **a** and **2a** respectively. Then what is the $\frac{C+B}{A}$?



7. The side length of a regular hexagon is s; express the line inside of the hexagon in terms of s.