Key Words & Phrases

ADD	SUBTRACT	MULTIPLY	DIVIDE
Add	*subtracted from	Multiplied by	Divide
Sum	Difference	Of	Quotient
*More than	*Less than	Product	Divided equally
Increased by	Decreased by	Times	Per
Exceeds	Diminished by	Double	Ratio of
In all	Minus	Twice	
Total	Fewer	Triple	
Plus	Reduced by		

** a number: x

** is or is equal to : =

* Be careful using; more than, less than and subtracted from, because it reverses the order.

I. Use mathematical symbols to translate the following verbal phrases into algebraic expressions

1) 2 more than a number

2) w less than 3

3) six decreased by 5 times a number

4) the product of 5r and s

5) 25, diminished by 4 times n

6) twice x, decreased by 10

7) five less than three times a number

8) the sum of t and u, divided by 6

9) three-fourths of a number

10) seven times a number, increased by 4

II. Translate the following verbal phrases into algebraic equations

1) A number minus 26 is 18

2) 7 more than 2 times a number is 13

3) The product of 5 and a number is 10

4) two less than three times a number is 28

5) one-sixth of a number is 66

6) A number increased by 83 is 105.

III. Legend Practice:

1) The cost of a mountain bike is 5 times the cost of a skateboard. If the skateboard costs x dollars, represent the cost of the mountain bike.

2) The number of kilometers traveled by a bus is represented by x. If a train traveled 200 kilometers farther than the bus, represent the number of kilometers traveled by the train.

IV. Algebra word problems

1) Which algebraic equation represents "when a number is tripled and then increased by 2, the result is 17?

a) $3n = 17 + 2$
b) $3(n + 2) = 17$
c) $3n + 2 = 17$
d) $n + 3 \times 2 = 17$

2) "Twice y, increased by 7 is equal to eight times y, less than 37" is represented by the algebraic equation:

a) $2(y + 7) = 37 - 8y$
b) $2y + 7 = 37 - 8y$
c) $2y + 7 = 8(37 - y)$
d) $2(y + 7) = 8(37 - y)$

V. Inequality word problems

***Frequently, word problems involve translating an English sentence into an inequality. The following is a list of key words to help you in writing your inequalities.

$x > 12$	$x \geq 12$
A number is more than 12. A number exceeds 12. A number is greater than 12. A number is over 12.	A number is at least 12. A number has a minimum value of 12. A number is not less than 12. A number is not under 12.
$x < 12$	$x \leq 12$
A number is less than 12. A number is under 12.	A number is at most 12. A number has a maximum value of 12. A number is not greater than 12. A number does not exceed 12. A number is not more than 12.

VI. Translate each sentence into an algebraic inequality

1) y is greater than or equal to 4.

2) x is less than or equal to 15

3) x is more than 50

4) A number is under 15

5) x is at most 50.

6) The sum of 5x and 2x is at least 70.

7) The minimum value of 2x + 1 is 13.

8) The maximum value of a number x is 3

VII. Solve the following basic inequalities: (Use LISC)

1) A store makes $7 on each watch sold. How many watches must be sold to make at least $140?

2) Lori rents a car for $88 a week plus $0.28 a mile. How far can she drive if she wishes to spend a maximum of $200?

3) Brian is paid $150 a week plus $15 commission on each camera he sells. How many must he sell to make a minimum of $600 a week?

4) Sally is paid $300 a week plus $14 commission on each shirt she sells. How many must she sell to make at least $400 for the week.