1.2 Translating Verbal Phrases into Algebraic Expressions

Translating verbal phrases to mathematical operations

Addition	Subtraction	Multiplication	Division
			Ratio

Extra vocabulary (Not in video):
- Twice/Doubled: "Multiply by 2"
- Quadrupled: "Multiply by 4"
- Quantity: "Parenthesis"
- Is: "Equals"

Keywords for Change in Order

What are "Turnaround Words"?

Basic Turnaround Words:
- TO
- FROM
- THAN

Addition	Subtraction	Multiplication	Division
• ADD ___ TO ___	• SUBTRACT ___ FROM ___	N/A	• DIVIDE ___ INTO ___
• ___ ADDED TO ___	• ___ SUBTRACTED FROM ___		• ___ DIVIDED INTO ___
• ___ MORE THAN ___	• ___ LESS THAN ___		

To help you solve these problems, box the turnaround word.

Example 3: Translate the following: a number less than seven

Example 5: Translate the following: divide five into 125

Example 6: Translate the following: twenty-five divided into one hundred

Translate the following phrases

¾ of a number

5 less than a number

the quotient of 7 and a number

The sum of a number and 8

The product of six less than a number and three

The quotient of a number and nine more than a number.

Equation: a mathematical sentence formed by placing the symbol = between two expressions

Inequality: a mathematical sentence formed by placing one of the symbols <, ≤, >, or ≥ between two expressions.

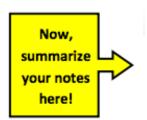| Symbol	Meaning	Other Words

Solution of the Equation or Solution of an inequality

when you substitute a number for the variable in an equation or inequality and the result is true

Check to see if 8 is a solution to the following.

$9g - 4 = 70$ $4y + 8 > 10$

Now, summarize your notes here!

SUMMARY:

1.2 Translating Verbal Phrases into Algebraic Expressions

PRACTICE

Translate the verbal phrase into an expression.	
1) 8 more than a number x	2) 50 divided by a number y
3) The quotient of twice a number t and 12	4) 5 more than 3 times a number w

Write an expression for the situation.		
5) Number of tokens needed for v video games if each game takes 4 tokens.	6) Amount you spend if you buy a shirt for $20 and jeans for j dollars	7) Number of months in y years

Write each as an algebraic expression.		
8. 5 less than x	9. x increased by 6	10. n cubed
11. The sum of q and 8	12. The quotient of 18 and n	13. 3 times a number decreased by 11
14. The product of x and 12	15. 4 times the sum of x and 3	16. Twice the sum of x and 3
17. Seven divided by twice a number	18. The quotient when the quantity 10 plus a number x is divided by 2	19. The difference of 22 and the square of a number m

Write each as a verbal expression in <u>two</u> ways.	
20. $5 - x$ I. II.	**21.** 5n I. II.

Write each as a verbal expression.	
22. $q^2 + 2$	23. $3(x - 2)$

Write an equation or an inequality	
26. The sum of 42 and a number n is equal to 51.	27. The sum of 12 and the quantity 8 times a number k is equal to 48.
28. The sum of a number b and 3 is greater than the quotient of b and 2.	29. Y is greater than or equal to the product of x and 7.
30. 4 less than the quantity 6 times a number n is 38.	31. The difference of 22 an the square of a number m is at least 18.

32. Write an inequality for the price p (in dollars) described.

Sale! Nothing over $10!

Describe and correct the error in writing the verbal sentence as an equation or an inequality.

33. The quotient of a number t and 4.2 is at most 15.

$$\frac{t}{4.2} > 15$$

Check whether the given number is a solution of the equation or inequality.

34. $9 + 4y = 17$; 1	35. $\frac{r}{3} - 4 = 4; 12$
36. $y - 3.5 < 6$; 9	37. $4z - 5 < 3$; 2

Solve the equation using mental math.

36. $y + 16 = 25$	37. $8b = 72$

Skillz Review

Plot the points:	Simplify:	Simplify:
1) (-3, 4) 2) (5,0)	3) $\dfrac{7-3}{-20-(-2)}$	4) $(-2)^3 + 2(4)$
	5) $\dfrac{1-6}{-10-2}$	6) $[5 - (2-4)]^2 - 8/2$

1.2 Translating Verbal Phrases into Algebraic Expressions   **APPLICATION**

Use a verbal model to write an expression.

1) Billy bought p packs of baseball cards. There are 7 cards in each pack.

   Write an expression that shows how many baseball cards Billy bought.

2) A piece of ribbon r feet long is cut from a ribbon 8 feet long.

   Write an expression for the length (in feet) of the remaining piece.

3) You work with 5 other people at an ice cream stand. All the workers put their tips into a jar and share the amount in a jar equally at the end of the day.

   Write an expression for each person's share (in dollars) of the tip.

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