



Topic 1-1 Translating Verbal Phrases



Common Translation Words

Phrase	Operation
Sum, More than, increased by	
Difference, Less than, decreased by	
Product, Of, Multiplied by	
Quotient	
Twice	

Example 1: Translate the following into algebraic expressions

- a) The sum of a number and 5 b) The quotient of a number and 10
- c) The product of 6 and a number d) The difference of a number and 8.
- e) $\frac{1}{2}$ of a number f) Twice a number

Turn Around Words

Word	Phrase	Example
Than	Six less than a number	
From	10 subtracted from a number	

Example 2: Circle any turn-around words and then translate the phrase into an algebraic expression

- a) 12 more than a number b) 5 less than twice a number
- c) 3 less than 4 times a number e) 11 plus the quotient of a number and 7

The presence of certain phrases in a verbal expression require the use of PARENTHESES. They are:



- 1) _____
- 2) _____
- 3) _____

Example 3: Translate each of the following using parentheses in the appropriate place.

- a) Three times the difference of a number and twelve
- b) 5 times the sum of a and b .
- c) Twice the difference of a number and 10.

Name: _____ Date: _____

Identifying Parts and Translating Expressions

1. Identify each term, coefficient, constant, and factor in $5x^2 + 3x + 12$.
 2. Write an expression with 4 terms, containing the coefficients 3, 6, and 9.
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Translate each verbal expression to an algebraic expression.

- | | |
|--|---|
| 3. Eight more than 3 times a number | 4. The difference of 10 and a number |
| 5. The quotient of 12 and a number | 6. 15 less than twice a number |
| 7. Three-fourths times the square of a number | 8. The product of 5 and the cube of a number increased by the difference of 6 and x |
| 9. Half the sum of x and y decreased by one-third of y | 10. The sum of a number and six, divided by eight |
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Translate each algebraic expression to a verbal expression.

- | | |
|------------------------|----------------|
| 11. $25 - x$ | 12. $x^4 - 12$ |
| 13. $3 + \frac{1}{2}x$ | 14. $8^2 - x$ |
| 15. $\frac{6-x}{13}$ | 16. $25(6+x)$ |

Name _____ Date _____ Period _____

Why Did the Cow Keep Jumping Over the Barrel?

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
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Translate each phrase below into an algebraic expression and find your answer in the corresponding answer column. Write the letter of that exercise in the box that contains the number of the answer.

E	3 times a number	18	$x + 3$	S	5 times a number, increased by 8	22	$8(x + 5)$
O	3 more than a number	15	$3x - 8$	A	5 times the sum of a number and 8	4	$8(2x + 5)$
S	3 decreased by a number	19	$x - 3$	H	5 more than 8 times a number	2	$8x + 5$
R	3 less than a number	12	$3x + 8$	O	8 times the sum of a number and 5	13	$2(5x + 8)$
A	one third of a number	3	$3x$	C	Twice the sum of 5 times a number and 8	6	$5x + 8$
I	8 more than 3 times a number	25	$3 - x$	T	2 more than five eighths of a number	20	$5(x + 8)$
N	8 less than 3 times a number	5	$x/3$	W	8 times the sum of twice a number and 5	11	$5/8x + 2$
A	7 less than 4 times a number	1	$7 - 4x$	T	9 meters higher than altitude x	7	$x + 15$
S	7 decreased by 4 times a number	16	$2x - 9$	F	15 meters per second slower than speed x	28	$x + 9$
G	9 less than twice a number	14	$7x + 4$	P	15 degrees hotter than temperature x	26	$4x - 9$
N	9 decreased by twice a number	9	$4x - 7$	O	9 meters shorter than twice length x	23	$2x - 9$
O	9 less than half a number	8	$7x + 4x$	C	9 years older than twice age x	10	$2x + 9$
I	7 times a number, increased by 4	24	$9 - 2x$	H	\$9 cheaper than 4 times price x	17	$x - 15$
R	7 times a number, increased by 4 times the number	27	$x/2 - 9$	M	9 centimeters less than three fourths of length x	21	$3/4x - 9$

29. Which algebraic expression represents 15 less than x divided by 9?

A $\frac{x}{9} - 15$ B $15 - \frac{x}{9}$

C $9x - 15$ D $15 - 9x$

30. Translate into an algebraic equation: **Two less than the product of five and x is thirteen.**

A. $5(x - 2) = 13$

B. $5x + 2 = 13$

C. $2 - 5x = 13$

D. $5x - 2 = 13$

31. Sam drew a rectangle whose length was 5 more than twice its width. How should he describe the length as an algebraic expression?

A $L = 5w + 2$

B $L = 5w - 2$

C $L = 2w + 5$

D $L = 2w - 5$

32. The perimeter of a rectangular wooden deck is 90 feet. The deck's length, l , is 5 feet less than 4 times its width, w . Which expression represents the length of the deck?

A $L = 5w - 4$

B $L = 4w - 5$

C $L = 5w + 4$

D $L = 4w + 5$

33. Which verbal expression can be represented by $2(x - 5)$?

A 5 less than 2 times x

B 2 multiplied by x less than 5

C twice the difference of x and 5

D the product of 2 and x , decreased by 5

Translate each situation into an algebraic equation:

- 1) Ann has the 5 newest music CD's which is 3 less than twice the amount that Bob has. _____
- 2) Mike, who has 6 video games, has half as many games as Paul.

- 3) Nan rode the roller coaster 8 times, which was twice as many times as she rode the Ferris wheel. _____
- 4) Janine, who bought \$15 worth of make-up, spent \$6 less than Leah spent. _____
- 5) Rob, who has all 13 girls' phone numbers that are in his homeroom, has 3 more than half the number of girls' phone numbers that Jay has.

- 6) Kate's 85 on her English test was 37 points less than twice the grade on her Science test. _____
- 7) At the Middle School Graduation Dance, the DJ played 12 slow dances, which was equal to the quotient of the number of fast dances and 2. _____
- 8) The 1,840 rock concert tickets sold were twice the amount of jazz concert tickets sold. _____
- 9) Meg received 90 votes for Student Council President, which were 50 less than twice the amount that Tom received.

- 10) The 347 students who listed soccer as their favorite sport were 13 less than three times the number of students who listed basketball as their favorite sport. _____

A. Use the information in each problem to fill in the chart or to label the diagram. Remember to pick a variable for what you know the least about in the problem.

1. Sean sold 4 more boxes of candy for the school fundraiser than Marta. The sum of the boxes they sold was 22. How many boxes did each sell?

WHO	NUMBER OF BOXES

2. Ned weighs $1\frac{1}{2}$ times as much as Jill and Tom weighs 15 kilograms more than Jill. If their combined weight is 190 kilograms, how much does each person weigh?

WHO	WEIGHT

3. Gina has \$72 in \$1 bills, \$5 bills, and \$20 bills. If she has three times as many \$1 bills as she has \$5 bills, and only half as many \$20 bills as \$5 bills, how many of each type of bill does she have?

TYPE OF BILL	HOW MANY?	VALUE OF EACH BILL	TOTAL VALUE OF BILL

4. The basketball teams of North Middle School and South Middle School played against each other twice this season. In the first game,

North's score was two-thirds of South's score. In the second game, North's score increased by seven points from the first game while South's score decreased by seven points from the first game. In the second game South's score was three less than North's score, what was the score for each team in both games?

TEAM	FIRST GAME	SECOND GAME

5. The sides of a triangular birdcage are consecutive integers. If the perimeter is 114 centimeters, what is the length of each side?



B. If you finished and got all of the charts/diagrams correct, see if you can write an equation to help you solve each problem. Then solve the equation and answer the problem.

Name _____ Date _____

Test on Word Problems

COMPLETE ANY 8 OF THE FIRST 10 PROBLEMS. YOU ALSO NEED TO COMPLETE EITHER 11 OR 12. YOU MAY DO MORE FOR EXTRA CREDIT. BE SURE YOU:

1) Fill in the Chart. 2) Write an equation. 3) Show work to solve equation. 4) Answer the problem.

1. Find four consecutive integers whose sum is 682. _____, _____, _____, _____

Consecutive Integer	Algebraic Representation
First	
Second	
Third	
Fourth	

2. I have twice as many nickels as quarters. If the coins are worth \$4.90, how many quarters and nickels do I have? _____ quarters _____ nickels

Coin	Number	Value	Total worth

3. Jack bought a pizza and a drink for \$2.65. If the pizza costs a penny more than 3 times the cost of the drink, how much did each cost? Drink: _____ Pizza: _____

Type of Food	Cost

4. Find a number that is 15 more than 4 times its opposite. Number: _____

Number	
Opposite	

5. Joe weighs 20 lbs. less than twice Jeff's weight. If Jeff would gain 10 lbs., then together they would weigh 250 lbs. How much does each weigh?

Joe: _____ Jeff: _____

Who	Now	Later

6. Karen is seven years older than Suzanne. Four years ago, Karen was twice as old as Suzanne was. How old are they now? Karen: _____ Suzanne: _____

Who	Now	4 years ago

7. The sum of the least and greatest of three consecutive integers is 72. What are the three integers? _____, _____, _____

Consecutive Integers	Algebraic Representation
First	
Second	
Third	

8. The Maryland Monkeys won six less than twice as many soccer games as The Pennsylvania Pigs. If the teams won a total of 48 games, how many games did each win? The Maryland Monkeys: _____ The Pennsylvania Pigs: _____

Team	# of Games
Maryland Monkeys	
Pennsylvania Pigs	

9. The sum of two consecutive odd integers is negative 28. Find the integers. _____, _____

Consecutive Odd Integers	Algebraic Representation
First	
Second	