

Translating Algebraic Expressions

You will need to translate between algebraic expressions and words to be successful in math.

To translate words into algebraic expressions, look for words that indicate the action that is taking place.
operation

Translations: Fill in the appropriate words for each math operation.

80 Half

80 Plus

80 Triple

80 More Than

80 Difference

80 To the power of

80 Sum

80 Decreased

80 Twice

80 Less Than

80 Raised to a power

80 Take away

80 Increased

80 Cubed

80 Minus

80 Quotient

80 Product

80 Divide by

80 Double

80 Add

80 Times

80 Together

80 Square

Addition- (6 words)

Subtraction- (5 words)

Division- (3 words)

Multiplication- (5 words)

Exponents- (4 words)

**Reversing the Order: FITT

You Reverse the # and the variable when you see:

F - subtracted From

I - divided Into

T - more than or less than

T - added to

Have no
equal sign

Translate each verbal expression into an algebraic expression:

1.) The sum of a number and 10

$$x + 10$$

2.) The product of 9 and x squared

$$9x^2$$

3.) 9 less than g to the fourth power

$$g^4 - 9$$

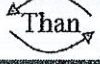


4.) 8 increased by 4 times a number

$$8 + 4x$$

$$4x + 8 \leftarrow \text{Standard form}$$

WORD WALL:

| <u>Addition (+):</u> | <u>Subtraction (-):</u> | <u>Multiplication (x):</u> | <u>Division (÷):</u> |
|---|--|---|---|
| <ul style="list-style-type: none"> More Sum → (and) Increase Plus Total → (and) Added to Combined Include | <ul style="list-style-type: none"> Less Difference → (and) Decrease Minus Diminished Exclude Remove Take away Reduced | <ul style="list-style-type: none"> Times Product → (and) Twice (*2) Doubled (*2) Triple (*3) Of Multiple | <ul style="list-style-type: none"> Divided By Quotient → (and) Separated Split Cut |

Tricky:   

Convert the following phrases and sentences to algebraic expressions:

1. "The sum of three and an unknown number."

$$x + 3$$

2. "Three less than an unknown number."

$$x - 3$$

3. "A number doubled reduced by five."

$$2x - 5$$

4. "The number of five increased by three times a number."

$$5 + 3x$$

5. "The product of three and an unknown number diminished by eight."

$$3x - 8$$

6. "Four subtracted from a number."

$$x - 4$$

7. "The quotient of a number tripled and six."

$$\frac{3x}{6}$$

8. "Three times the sum of a number and four."

$$3(x + 4)$$

9. "Ten subtracted from twice a number."

$$2x - 10$$

10. "Twice the difference of 7 and a number."

$$2(x - 7)$$

WORD WALL:

| | | | |
|--|--|--|--|
| Addition (+): <ul style="list-style-type: none"> More Sum → (and) Increase Plus Total → (and) Added to Combined Include | Subtraction (-): <ul style="list-style-type: none"> Less Difference → (and) Decrease Minus Diminished Exclude Remove Take away Reduced | Multiplication (×): <ul style="list-style-type: none"> Times Product → (and) Twice (*2) Doubled (*2) Triple (*3) Of Multiple | Division (÷): <ul style="list-style-type: none"> Divided By Quotient → (and) Separated Split Cut |
| Tricky: <div> Δ Than ∇ </div> | <div> Δ From ∇ </div> | <div> Δ To ∇ </div> | |

Convert the following phrases and sentences to algebraic expressions:

11. 4 of a number increased by seven.

$$4x + 7$$

12. Twice the total of a number and three.

$$2(x + 3)$$

13. Five add to a number squared.

$$x^2 + 5$$

14. Nine decreased by a number cubed.

$$9 - x^3$$

15. Lori is 4 years younger than Shawn. Write an expression that represents Lori's age in relation to Shawn.

$$L = S - 4$$

16. Jennifer is 1 year older than twice Zack's age. Write an expression that represents Jennifer's age in relation to Zack.

$$J = 1 + 2Z$$

17. Jerry worked 2 hours less than four times as many hours as Katrina worked. Write an expression that represents the number of hours Jerry worked in relation to Katrina.

$$J = 4K - 2$$