

Translate & Represent Expressions & Equations

Translating from English to mathematics and vice versa simply requires understanding the language of functional operations. The following chart lists some words and their operational meaning!

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION	EQUALS
<ul style="list-style-type: none"> • Sum* • <u>Added To**</u> • <u>More Than**</u> • Add • Plus • Total • Increased By 	<ul style="list-style-type: none"> • Difference* • <u>Less Than**</u> • <u>Subtracted From**</u> • Subtract • Minus • Decreased By • Take Away 	<ul style="list-style-type: none"> • Product* • Multiply By • Times • Double • Twice • Triple • Of 	<ul style="list-style-type: none"> • Quotient* • Divided By • Divided Into • Half • Ratio Of • Reciprocal Of 	<ul style="list-style-type: none"> • Is • Yields • Will Be • Results As • Represents • Equivalent To

*The **BOLD** terms represent the response to a problem; therefore, parenthesis may be applied.

**The underlined terms represent flip-flop frazes. These require switching the order.



Write it as is!
 Ex₁ ten plus a number
 \downarrow
 $10 + x$

() Parenthesis required!
 Ex₂ twice the sum of three and a number
 \downarrow
 $2(3 + x)$

Flip-flopping required!
 Ex₃ ten more than a number
 \downarrow
 $x + 10$

Phrase ~ Expression

Ex₄ the sum of a number and 5
 \downarrow
 $x + 5$

Sentence ~ Equation

Ex₅ Twice the difference of 6 and a number is 24.
 \downarrow
 $2(6 - x) = 24$



We **CANNOT** solve an expression; we have to be given the value of the variable to evaluate the expression.

Translate each phrase into its mathematical expressions. Within each applicable phrase, circle terms that require parenthesis and underline terms that require flipping the order.

- | | |
|---|--|
| 1. ten decreased by a number _____ | 2. five plus a number _____ |
| 3. the product of a number and two _____ | 4. the quotient of four and a number _____ |
| 5. the difference of one and a number _____ | 6. half a number _____ |
| 7. a number divided by four _____ | 8. four divided by a number _____ |



Match the phrase with the expressions. (BE CAREFUL!!!)

- | | |
|---|---|
| 9. _____ seven more than a number | 10. _____ a number less than seven |
| 11. _____ seven less than a number | 12. _____ a number more than seven |
| 13. _____ a number subtracted from five | 14. _____ five subtracted from a number |
| 15. _____ a number added to five | 16. _____ five added to a number |

A. $5 + x$	B. $7 + x$	C. $x - 7$	D. $5 - x$
E. $x + 5$	F. $x + 7$	G. $x - 5$	H. $7 - x$

**Within each applicable phrase, circle terms that require parenthesis.
Then create a two-step expression from each phrase.**

- 17. the product of a number and five plus six _____
- 18. seven minus the quotient of three and a number _____
- 19. twice the sum of a number and four _____
- 20. the difference of three and a number divided by two _____
- 21. the product of 3 and a number less eight _____
- 22. seven times the sum of a number and one _____



**Underline terms that require flipping the order.
Then create a two-step expression from each phrase.**



- 23. seven more than the product of two and a number _____
- 24. nine less than the quotient of a number and seven _____
- 25. four added to three times a number _____
- 26. nine subtracted from a number divided by six _____

Within each applicable phrase, circle terms that require parenthesis and underline terms that require flipping the order. Translate each sentence into a mathematical equation.



Do NOT solve.)

- 27. Four added to a number yields twelve. _____
- 28. The product of a number and two plus five equals eleven. _____
- 29. The quotient of a number and five subtract two yields seven. _____
- 30. Twice the sum of a number and four equals 24. _____
- 31. Seven more than the product of three and a number is twelve. _____
- 32. Twice the difference of a number and four yields ten. _____

Identify the mistake that was made in each translation and make it correct.

- 33. Five less than the product of two and a number $5 - 2n$ _____
- 34. Eight added to the quotient of a number and one $8 + \frac{n}{1}$ _____
- 35. Three less than twice a number $3 - 2n$ _____
- 36. The quotient of a number and four minus two $\frac{4}{n} - 2$ _____
- 37. Twice the sum of a number and three $2n + 3$ _____