

8.3 Writing Equations

ADDITION

- sum
- increased by
- plus
- more than
- added to
- the total of

EXAMPLES: Write the phrase as a variable expression. Let x represent the number.

1. fifteen more than a number

$$15 + x$$

2. the sum of a number and eight

$$x + 8$$

SUBTRACTION

*ORDER IS IMPORTANT!!

- difference
- decreased by
- minus

*less than FLIP!!

- subtracted to
- less

3. a number decreased by three

$$x - 3$$

4. twenty-seven less than a number

$$x - 27$$

5. the difference of nine and a number

$$9 - x$$

6. a number less one

$$x - 1$$

MULTIPLICATION

- product
- multiplied by
- times
- of

7. the product of eighty-five and a number

$$85 \cdot x \text{ or } 85x$$

8. one-half of a number

$$\frac{1}{2} \cdot x \text{ or } \frac{1}{2}x$$

9. twenty times a number

$$20 \cdot x \text{ or } 20x$$

DIVISION

*ORDER IS IMPORTANT!

- quotient
- divided by
- the ratio of

10. the quotient of eleven and a number

$$11 \div x \quad \text{OR} \quad \frac{11}{x}$$

11. a number divided by three

$$x \div 3 \quad \text{OR} \quad \frac{x}{3}$$

PHRASE  EXPRESSION

SENTENCE  EQUATION

For the sentence to be an equation, the key word "is" helps denote the equation sign.

Write the sentence as an equation.

12. The quotient of seven and a number is twenty-one.

$$7 \div x = 21$$

13. The sum of a number and three is eight.

$$x + 3 = 8$$

14. Two-thirds of a number is nine.

$$\frac{2}{3}x = 9$$

Write the sentence as an equation.

15. Four ^{add} more than ^{multi.} 0.3 times a number is -26.

$$4 + 0.3x = -26$$

16. Hannah has 24 stickers. This is 6 ^{FLIP} less than twice the number of stickers Molly has.

$$24 = 2x - 6$$

17. The quotient of a number and 7, increased by 6, is 12.

$$\frac{x}{7} + 6 = 12$$