

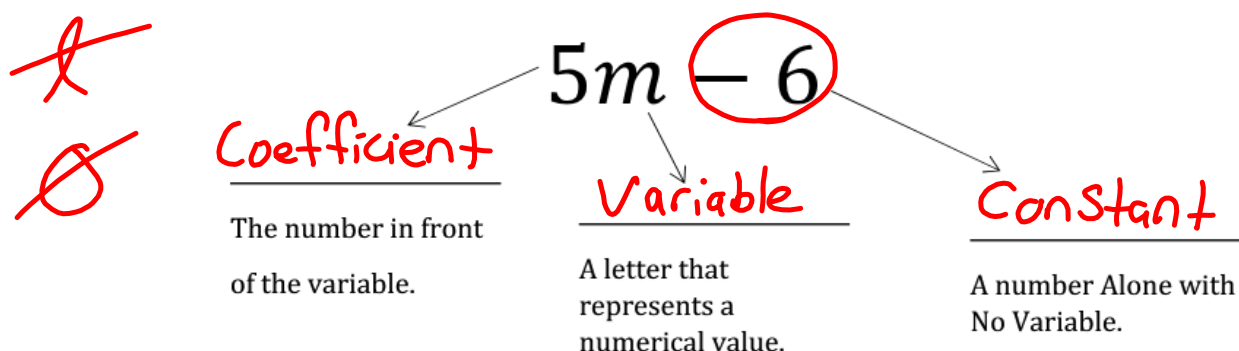
Do Now

Write as many words that mean each operation below as you can think of.

<u>Addition</u>	<u>Subtraction</u>	<u>Multiplication</u>	<u>Division</u>
Sum Plus "and" total Combine	increase more than greater than Altogether add -how much more - minus - difference - Subtract - decrease	-less than - product - multiply by - times - of	-how many times - quotient - "per" - "over" - divide by - goes into

Lesson #54 - Translating Expressions

An Expression is a mathematical sentence that DOES NOT CONTAIN an equal sign. There are different parts to every expression.



Identify the parts of the following expressions.

1) $3x - 5$ Coefficient: <u>3</u> Variable: <u>x</u> Constant: <u>-5</u>	2) $9 + 2x$ Coefficient: <u>2</u> Variable: <u>x</u> Constant: <u>9</u>	3) $-8 - 15x$ Coefficient: <u>-15</u> Variable: <u>x</u> Constant: <u>-8</u>
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Just like you can translate something from English to Spanish, you can translate words into a numerical expression.

<u>Operation</u>	<u>Verbal Expression</u>	<u>Algebraic Expression</u>
<b>+</b>	<ul style="list-style-type: none"> <li>A number increased by 3</li> <li>The sum of a number and 3</li> <li>3 more than a number</li> <li>A number plus 3</li> </ul>	$9 + 3$
<b>-</b>	<ul style="list-style-type: none"> <li>The difference of a number and 5</li> <li>A number minus 5</li> <li>A number diminished by 5</li> <li>A number decreased by 5</li> <li>5 subtracted from a number</li> <li>5 less than a number</li> </ul>	$9 - 5$
<b>X</b>	<ul style="list-style-type: none"> <li>The product of 2 and a number</li> <li>A number times 2</li> <li>A number multiplied by 2</li> </ul>	$2x$
<b>÷</b>	<ul style="list-style-type: none"> <li>A number divided by 6</li> <li>The quotient of a number and 6</li> </ul>	$x \div 6$ or $\left(\frac{x}{6}\right)$
<b>=</b>	<ul style="list-style-type: none"> <li>A number increased by 12 is 20</li> </ul>	$x + 12 = 20$

**Examples:** Translate the following sentences into expressions or equations. Underline key words and use "n" as "the number".

4) five times a number is 30.

$$\underline{5x = 30}$$

5) 2 subtracted from x

$$\underline{x - 2}$$

6)  $\frac{1}{4}$  of a number is 8.

$$\underline{\frac{1}{4}x = 8}$$

7) the difference between twice a number and three is nine.

$$\underline{2x - 3 = 9}$$

8) The sum of a number and 4 multiplied by  $\frac{1}{2}$ .

$$\underline{\frac{1}{2}(x + 4)}$$

9) Henry fixes TV's. He charges \$25 for a diagnostic fee plus \$24 per hour.

$$\underline{24x + 25}$$

**Now, You Try!** Translate the following sentences into an expression or equation. Use "n" as your variable.

10) Eleven less than a number

$$\underline{n - 11}$$

11) the product of a number and six is negative 18.

$$\underline{6x = -18}$$

12) twice a number plus 12.

$$\underline{2x + 12}$$

13) five times the sum of a number and four is 17.

$$\underline{(x + 4) \cdot 5 = 17}$$

14) Samantha bought jewelry at a crafts fair. She bought a necklace for \$8 and some bracelets for \$5 each. She spent \$23 in all. Write an equation that can be used to find the number of bracelets Samantha bought.

$$8 + 5x = 23$$

15) Five times a number increased by seven

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16) Three times a number x subtracted from 24

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17) Anthony babysits for a neighbor on the weekends. He charges a flat fee of \$10 plus \$5 per hour. On Saturday, he makes \$30. Write an equation that can be used to find the number of hours Anthony works.

18) Write a verbal expression (sentence) for each expression below.

a)  $m + 6$

b)  $x^2 + 3$

c)  $2x + 7$

d)  $9 - x$