

# TRANSLATING ENGLISH INTO ALGEBRA

<b>+</b>	<i>a</i> plus <i>b</i> the sum of <i>a</i> and <i>b</i> <i>a</i> and <i>b</i> are added <i>b</i> is added to <i>a</i> <i>a</i> is increased by <i>b</i> <i>b</i> more than <i>a</i>	$a + b$
<b>-</b>	<i>a</i> minus <i>b</i> the difference between <i>a</i> and <i>b</i> <i>b</i> subtracted from <i>a</i> <i>a</i> decreased by <i>b</i> <i>a</i> diminished by <i>b</i> <i>b</i> less than <i>a</i> <i>a</i> reduced by <i>b</i>	$a - b$
<b>×</b>	<i>a</i> times <i>b</i> the product of <i>a</i> and <i>b</i> <i>b</i> multiplied by <i>a</i>	$a \times b, a \cdot b, ab, (a)(b)$
<b>÷</b>	<i>a</i> divided by <i>b</i> the quotient of <i>a</i> and <i>b</i>	$a \div b, \frac{a}{b}$

## Examples

1)  $\overbrace{\text{Three times}}^3 \overbrace{\text{a number}}^x \overbrace{\text{is}}^{\text{is}} \overbrace{21}^{21}$ . Find the number.

$$\begin{array}{r} 3x = 21 \\ \underline{3} \quad \underline{3} \\ x = 7 \end{array}$$

2)  $\overbrace{\text{A number}}^x \overbrace{\text{increased by}}^+$   $\overbrace{12}^{12}$   $\overbrace{\text{is}}^{\text{is}}$   $\overbrace{17}^{17}$ . Find the number.

$$\begin{array}{r} x + 12 = 17 \\ \underline{-12 \quad -12} \\ x = 5 \end{array}$$

3)  $\overbrace{\text{A number}}^x \overbrace{\text{decreased by}}^-$   $\overbrace{4}^4$   $\overbrace{\text{is}}^{\text{is}}$   $\overbrace{5}^5$ . Find the number.

$$\begin{array}{r} x - 4 = 5 \\ \underline{+4 \quad +4} \\ x = 9 \end{array}$$

4)  $\overbrace{\quad\quad\quad}^{x-2} \overset{=}{\underset{=}{\quad\quad\quad}} \overset{20}{\quad\quad\quad}$ . Find the number.

$$\begin{array}{r} x - 2 = 20 \\ +2 \quad +2 \\ \hline x = 22 \end{array}$$

5)  $\overbrace{\quad\quad\quad}^x \overbrace{\quad\quad\quad}^{\div} \overset{2}{\quad\quad\quad} \overset{=}{\underset{=}{\quad\quad\quad}} \overset{10}{\quad\quad\quad}$ . Find the number.

$$\begin{array}{r} \frac{x}{2} = 10 \\ \frac{x}{2} = \frac{10}{1} \\ \hline x = 20 \end{array}$$

6)  $\overbrace{\quad\quad\quad}^{2x-1} \overset{=}{\underset{=}{\quad\quad\quad}} \overset{59}{\quad\quad\quad}$ . Find the number.

$$\begin{array}{r} 2x - 1 = 59 \\ +1 \quad +1 \\ \hline 2x = 60 \\ \div 2 \quad \div 2 \\ \hline x = 30 \end{array}$$

7)  $\overbrace{\quad\quad\quad}^{\frac{2}{3}}$  a number is  $\overset{=}{\underset{=}{\quad\quad\quad}} \overset{6 \text{ less than}}{\quad\quad\quad} \overbrace{\quad\quad\quad}^{\frac{1}{2} \cdot x - 6}$  of the number, find the number.

$$\begin{array}{r} \frac{2}{3}x = \frac{1}{2}x - 6 \\ \frac{2x}{3} = \frac{1x}{2} - \frac{6}{1} \\ \frac{2x}{3} = \frac{x-12}{2} \\ 4x = 3x - 36 \\ -3x \quad -3x \\ \hline x = -36 \end{array}$$

8)  $\overbrace{\quad\quad\quad}^{3x-2} \overset{=}{\underset{=}{\quad\quad\quad}} \overbrace{\quad\quad\quad}^x \overset{+}{\underset{+}{\quad\quad\quad}} \overset{20}{\quad\quad\quad}$ , find the number.

$$\begin{array}{r} 3x - 2 = x + 20 \\ -x \quad -x \\ \hline 2x - 2 = 20 \\ +2 \quad +2 \\ \hline 2x = 22 \\ \div 2 \quad \div 2 \\ \hline x = 11 \end{array}$$