



**THIRD SPACE  
LEARNING**

# Substitution Worksheet

Algebra

**Grades 6 to 8**

## Skill Questions

Name: .....

Date: .....

- 1 Solve the expression  $4x + 2y$  when  $x = 3$  and  $y = 5$ .

Answer

- 2 If  $a = 2$  and  $b = 7$ , evaluate the expression  $3a - 2b$ .

Answer

- 3 Substitute  $x = 6$  into the equation  $2x + 5$  and evaluate.

Answer

- 4 Given the expression  $3y - 8$ , find the result when  $y = 4$ .

Answer

- 5 Evaluate  $7z - 15$  when  $z = 4$ .

Answer

## Substitution Worksheet | Grades 6 to 8

6 If  $x = 10$ , what is the value of the expression  $2x - 3$ ?

Answer

7 Evaluate the expression  $5a + 2b$  when  $a = 4$  and  $b = 6$ .

Answer

8 Substitute  $y = 8$  into the equation  $2y + 12 = 28$  and determine if the equation is true.

Answer

9 Solve the equation  $4p - 7 = 25$  by substituting the correct value for  $p$ .

Answer

10 If  $m = 3$  and  $n = 9$ , find the value of the expression  $2m + n$ .

Answer

## Applied Questions

- 11** If the cost of a concert ticket is represented by the expression  $15x + 25$ , where  $x$  is the number of tickets purchased, find the total cost when 8 tickets are bought.

Answer

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- 12** A rectangle has a length represented by the expression  $3a + 7$  and a width represented by  $2a - 4$ . Find the area of the rectangle when  $a = 5$ .

Answer

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- 13** The temperature in degrees Celsius is given by the expression  $5t - 10$ , where  $t$  is the temperature in degrees Fahrenheit. If the temperature in Fahrenheit is 32 degrees, find the temperature in Celsius.

Answer

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## Substitution Worksheet | Grades 6 to 8

- 14 An algebraic expression for the perimeter of a square is  $4s + 2$ , where  $s$  is the length of one side. If the perimeter is 30 units, find the length of each side using substitution.

Answer

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- 15 A car rental company charges a base fee of \$40 plus \$0.25 per mile driven. Find the total cost (C) for renting a car for 125 miles using substitution.

Answer

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## Answers

| Question number | Question   | Answers               | Standard |
|-----------------|--|-----------------------|----------|
| 1               | Solve the expression $4x + 2y$ when $x = 3$ and $y = 5$ .                                  | 22                    | 6.EE.B.5 |
| 2               | If $a = 2$ and $b = 7$ , evaluate the expression $3a - 2b$ .                               | -8                    | 6.EE.B.5 |
| 3               | Substitute $x = 6$ into the equation $2x + 5$ and evaluate.                                | 17                    | 6.EE.B.5 |
| 4               | Given the expression $3y - 8$ , find the result when $y = 4$ .                             | 4                     | 6.EE.B.5 |
| 5               | Evaluate $7z - 15$ when $z = 4$ .  | 13                    | 6.EE.B.5 |
| 6               | If $x = 10$ , what is the value of the expression $2x - 3$ ?                               | 17                    | 6.EE.B.5 |
| 7               | Evaluate the expression $5a + 2b$ when $a = 4$ and $b = 6$ .                               | 32                    | 6.EE.B.5 |
| 8               | Substitute $y = 8$ into the equation $2y + 12 = 28$ and determine if the equation is true. | Yes, $2(8) + 12 = 28$ | 6.EE.B.5 |
| 9               | Solve the equation $4p - 7 = 25$ by substituting the correct value for p.                  | 8                     | 6.EE.B.5 |
| 10              | If $m = 3$ and $n = 9$ , find the value of the expression $2m + n$ .                       | 15                    | 6.EE.B.5 |

## Substitution Worksheet | Grades 6 to 8 | Answers




| Question number | Question   | Answers                                    | Standard |
|-----------------|--|--|----------|
| 11              | If the cost of a concert ticket is represented by the expression $15n + 25$ , where $n$ is the number of tickets purchased, find the total cost when 8 tickets are bought.                                     | The total cost is \$145.                   | 6.EE.B.5 |
| 12              | A rectangle has a length represented by the expression $3a + 7$ and a width represented by $2a + 4$ . Find the area of the rectangle when $a = 5$ .  | The area is 132 square units.              | 6.EE.B.5 |
| 13              | The temperature in degrees Celsius is given by the expression $5t - 10$ , where $t$ is the temperature in degrees Fahrenheit. If the temperature in Fahrenheit is 32 degrees, find the temperature in Celsius. | The temperature is $150^{\circ}\text{C}$ . | 6.EE.B.5 |
| 14              | An algebraic expression for the perimeter of a square is $4s + 2$ , where $s$ is the length of one side. If the perimeter is 30 units, find the length of each side using substitution.                        | The length of each side is 7 units.        | 6.EE.B.5 |
| 15              | A car rental company charges a base fee of \$40 plus \$0.25 per mile driven. Find the total cost (C) for renting a car for 125 miles using substitution.   | The total cost is \$71.25                  | 6.EE.B.5 |

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