

Evaluating Two Variables

Name: _____ Date: _____ Score: _____ / 18

Quick Review and Helpful Hints

When an expression has two variables, substitute a value for *each* one (in parentheses), then simplify using the order of operations. Be sure to replace every copy of each variable before you start computing.

▶ **Example:** Evaluate $2x + 3y$ when $x = 4$ and $y = 2$. **Work:** Substitute both values: $2(4) + 3(2)$. Multiply each term first: $8 + 6$. Then add. ★ **Answer:** 14

◆ Practice Problems

Evaluate each expression for the given values.

- | | |
|--|---|
| <p>1. $x + y$, when $x = 5, y = 3$ _____</p> <p>2. xy, when $x = 6, y = 4$ _____</p> <p>3. $2x + y$, when $x = 3, y = 7$ _____</p> <p>4. $x - y$, when $x = 10, y = 4$ _____</p> <p>5. $3x + 2y$, when $x = 2, y = 5$ _____</p> <p>6. $xy + 1$, when $x = 4, y = 3$ _____</p> <p>7. $x^2 + y$, when $x = 3, y = 8$ _____</p> | <p>8. $2(x + y)$, when $x = 5, y = 1$ _____</p> <p>9. $5x - y$, when $x = 4, y = 6$ _____</p> <p>10. $\frac{x}{y}$, when $x = 12, y = 3$ _____</p> <p>11. $x^2 + y^2$, when $x = 3, y = 4$ _____</p> <p>12. $xy - x$, when $x = 5, y = 2$ _____</p> <p>13. $4x + y$, when $x = -2, y = 10$ _____</p> <p>14. $x - 2y$, when $x = 9, y = 3$ _____</p> |
|--|---|

◆ Word Problems

15. The area of a rectangle is $A = lw$. Find the area when $l = 8$ m and $w = 5$ m. _____
16. The perimeter of a rectangle is $2l + 2w$. Find it when $l = 7$ ft and $w = 3$ ft. _____
17. A worker earns $15h + 20b$ dollars for h hours plus b bonuses. Find the pay when $h = 6$ and $b = 2$. _____
18. The expression $\frac{a + b}{2}$ gives the average of two test scores. Find it when $a = 88$ and $b = 92$. _____



Answer Keys

- | | | |
|------------------------------------|-------------------------------------|---|
| 1. <input type="text" value="8"/> | 7. <input type="text" value="17"/> | 13. <input type="text" value="2"/> |
| 2. <input type="text" value="24"/> | 8. <input type="text" value="12"/> | 14. <input type="text" value="3"/> |
| 3. <input type="text" value="13"/> | 9. <input type="text" value="14"/> | 15. <input type="text" value="40 m<sup>2</sup>"/> |
| 4. <input type="text" value="6"/> | 10. <input type="text" value="4"/> | 16. <input type="text" value="20 ft"/> |
| 5. <input type="text" value="16"/> | 11. <input type="text" value="25"/> | 17. <input type="text" value="\$130"/> |
| 6. <input type="text" value="13"/> | 12. <input type="text" value="5"/> | 18. <input type="text" value="90"/> |

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $5 + 3 = 8$. So the final answer is 8.
2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $6 \cdot 4 = 24$. So the final answer is 24.
3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $2(3) + 7 = 6 + 7 = 13$. So the final answer is 13.
4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $10 - 4 = 6$. So the final answer is 6.
5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $3(2) + 2(5) = 6 + 10 = 16$. So the final answer is 16.
6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $4 \cdot 3 + 1 = 12 + 1 = 13$. So the final answer is 13.
7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $3^2 + 8 = 9 + 8 = 17$. So the final answer is 17.
8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $2(5 + 1) = 2(6) = 12$. So the final answer is 12.
9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $5(4) - 6 = 20 - 6 = 14$. So the final answer is 14.
10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $\frac{12}{3} = 4$. So the final answer is 4.
11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $3^2 + 4^2 = 9 + 16 = 25$. So the final answer is 25.
12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $5 \cdot 2 - 5 = 10 - 5 = 5$. So the final answer is 5.
13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $4(-2) + 10 = -8 + 10 = 2$. So the final answer is 2.
14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $9 - 2(3) = 9 - 6 = 3$. So the final answer is 3.
15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 8 \cdot 5 = 40$ square meters. So the final answer is 40 m².
16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $2(7) + 2(3) = 14 + 6 = 20$ feet. So the final answer is 20 ft.
17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $15(6) + 20(2) = 90 + 40 = \130 . So the final answer is \$130.
18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $\frac{88 + 92}{2} = \frac{180}{2} = 90$. So the final answer is 90.



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