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.

1. $x + y$, when $x = 5,\ y = 3$ _____

2. xy, when $x = 6,\ y = 4$ _____

3. $2x + y$, when $x = 3,\ y = 7$ _____

4. $x - y$, when $x = 10,\ y = 4$ _____

5. $3x + 2y$, when $x = 2,\ y = 5$ _____

6. $xy + 1$, when $x = 4,\ y = 3$ _____

7. $x^2 + y$, when $x = 3,\ y = 8$ _____

8. $2(x + y)$, when $x = 5,\ y = 1$ _____

9. $5x - y$, when $x = 4,\ y = 6$ _____

10. $\frac{x}{y}$, when $x = 12,\ y = 3$ _____

11. $x^2 + y^2$, when $x = 3,\ y = 4$ _____

12. $xy - x$, when $x = 5,\ y = 2$ _____

13. $4x + y$, when $x = -2,\ y = 10$ _____

14. $x - 2y$, when $x = 9,\ y = 3$ _____

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. 8	**7.** 17	**13.** 2
2. 24	**8.** 12	**14.** 3
3. 13	**9.** 14	**15.** $40\ \text{m}^2$
4. 6	**10.** 4	**16.** $20\ \text{ft}$
5. 16	**11.** 25	**17.** $\$130$
6. 13	**12.** 5	**18.** 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 $40\ \text{m}^2$.

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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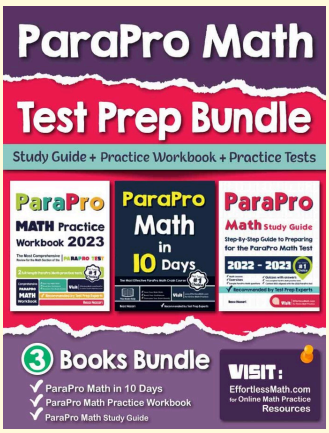

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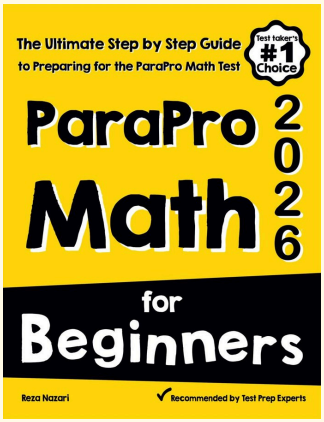

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