Visual Learning Animation
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What would you do if there were no parentheses in the expression? [Go on to the next step.]

Step 2
Then, multiply and divide in order from left to right.

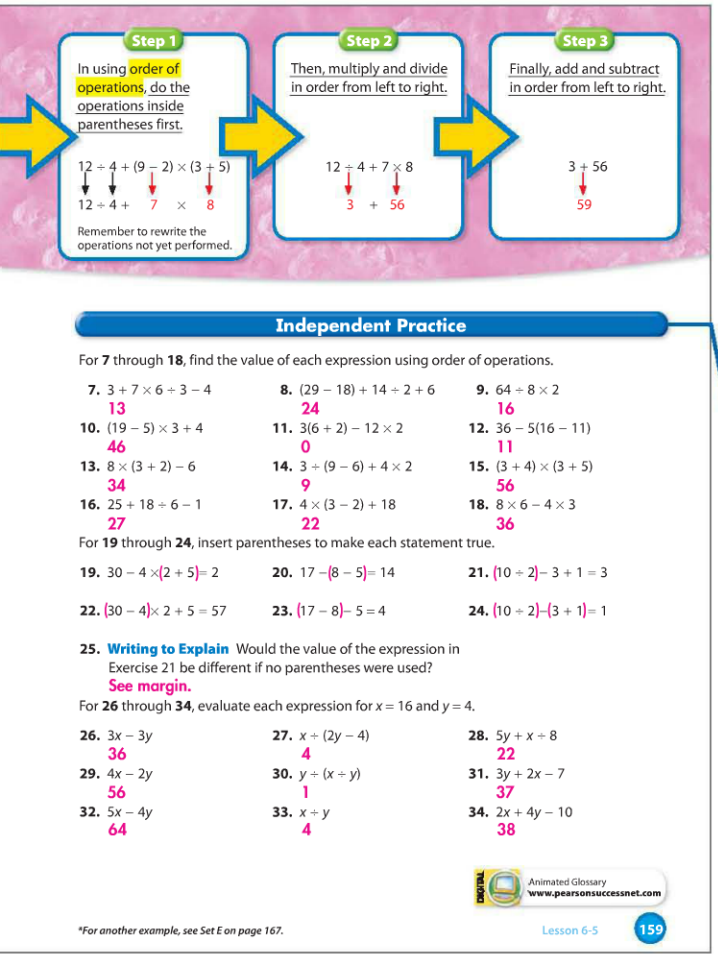
$12 \div 4 + 7 \times 8$
$3 \quad + \quad 56$

Stress the importance of multiplying and dividing from left to right. *Evaluate $15 \div 3 \times 5$ from left to right and again from right to left.* [25, 1]

Step 3
Finally, add and subtract in order from left to right.

$3 + 56$
59

Why were other additions and subtractions in the original expression completed before this step? [They were in parentheses.]



Independent Practice

For **7** through **18**, find the value of each expression using order of operations.

7. $3 + 7 \times 6 \div 3 - 4$ — 13
8. $(29 - 18) + 14 \div 2 + 6$ — 24
9. $64 \div 8 \times 2$ — 16
10. $(19 - 5) \times 3 + 4$ — 46
11. $3(6 + 2) - 12 \times 2$ — 0
12. $36 - 5(16 - 11)$ — 11
13. $8 \times (3 + 2) - 6$ — 34
14. $3 \div (9 - 6) + 4 \times 2$ — 9
15. $(3 + 4) \times (3 + 5)$ — 56
16. $25 + 18 \div 6 - 1$ — 27
17. $4 \times (3 - 2) + 18$ — 22
18. $8 \times 6 - 4 \times 3$ — 36

For **19** through **24**, insert parentheses to make each statement true.

19. $30 - 4 \times (2 + 5) = 2$
20. $17 - (8 - 5) = 14$
21. $(10 \div 2) - 3 + 1 = 3$
22. $(30 - 4) \times 2 + 5 = 57$
23. $(17 - 8) - 5 = 4$
24. $(10 \div 2) - (3 + 1) = 1$

25. Writing to Explain Would the value of the expression in Exercise 21 be different if no parentheses were used? **See margin.**

For **26** through **34**, evaluate each expression for $x = 16$ and $y = 4$.

26. $3x - 3y$ — 36
27. $x \div (2y - 4)$ — 4
28. $5y + x \div 8$ — 22
29. $4x - 2y$ — 56
30. $y \div (x \div y)$ — 1
31. $3y + 2x - 7$ — 37
32. $5x - 4y$ — 64
33. $x \div y$ — 4
34. $2x + 4y - 10$ — 38

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*For another example, see Set E on page 167.

25. It would not be different, because the order of operations states that you should divide first.

2 Guided Practice

Formative Assessment

Remind students that parentheses tell them which operations in an expression they should perform first.

Exercise 5
Error Intervention

If students cannot explain how Juan's method differs from the order of operations rules,

then, on the board, write the first two lines of Juan's work from the **Visual Learning Bridge.** Circle 36 + 9 in Juan's first line and 45 in Juan's second line. *Juan began computing at the left. What did he do first?* [Addition] *When do the order of operations rules say to add?* [After you multiply and divide]

Reteaching For another example and more practice, assign **Reteaching** Set E on p. 167.

3 Independent Practice

Remind students to first compute what is inside parentheses before evaluating the rest of an expression. *To help you remember the order of operations, you can make up a silly sentence using the first letter of the words you want to remember. The words from this lesson that you want to remember are "parentheses," "multiply," "divide," "add," and "subtract." Can anyone make up a silly sentence using words that start with the letters p, m, d, a, and s?* [Sample answer: Penguins mostly dive and swim.]

Use Exercise 19 as an example. *How would the value of the expression in Exercise 19 be different if there were no parentheses?* [Sample answer: You would multiply before you add, which would give you a different answer.]

See **Extensions** on page 167B.