What You Think

The Commutative and Associative Properties make it easy to add $17 + 9 + 3$.

17 and 3 are compatible numbers. These are numbers that are easy to compute mentally.

$17 + 3 = 20$

$20 + 9 = 29$

So, $17 + 9 + 3 = 29$.

The total cost is $29.

If Jon added the costs of the glasses and backpack to the cost of the game, would the total be different than if he started with the costs of the backpack and game and then added the glasses? [The total would be the same.]

Why It Works

Commutative Property: change the order

$17 + (9 + 3) = 17 + (3 + 9)$

Associative Property: change the grouping

$17 + (3 + 9) = (17 + 3) + 9$

What property allows you to change the grouping of addends? [Associative Property]

Prevent Misconceptions

When writing examples of the Associative Property, remind students that the parentheses identify the numbers and the operation to be used first.
$17 + (9 + 3) = (17 + 9) + 3$

What You Think

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Why It Works

Commutative Property: change the order

$17 + (9 + 3) = 17 + (3 + 9)$

Associative Property: change the grouping

$17 + (3 + 9) = (17 + 3) + 9$

2 **Guided Practice**   **Formative** Assessment

Remind students to use the Commutative Property and the Associative Property to help them answer the addition problems.

Exercise 2
Error Intervention

If students confuse the place value of digits when they try to use mental math,

then tell them: *Rewrite the problem in vertical form so that the digits are lined up in the correct columns.*

Reteaching For another example and more practice, assign **Reteaching** Set A on p. 52.

3 **Independent Practice**

Remind students to change the problems to simpler problems, if possible.

Guided Practice*

Do you know HOW?

In **1** through **6**, use mental math to add or subtract.

1. $21 + 9 + 12$
42

2. $35 + 46 + 4$
85

3. $19 + 34$
53

4. $38 + 15$
53

5. $47 - 19$
28

6. $86 - 49$
37

Do you UNDERSTAND?

7. **Writing to Explain** Which numbers are easier to subtract, $141 - 99$ or $142 - 100$? Explain.
See margin.

8. Jim earns $22, $14, and $8 on three different days. How much did he earn in all? Use mental math to find the sum.
$44

Independent Practice

In **9** through **26**, use mental math to add or subtract.

Tip When you add 3 or more numbers, look for compatible numbers.

9. $66 + 18 + 2$
86

10. $97 + 3 + 64$
164

11. $22 + 46 + 4$
72

12. $237 + 195 + 5$
437

13. $39 + 23 + 1$
63

14. $57 + 42 + 3$
102

15. $96 + 73 + 4$
173

16. $299 + 34 + 1 + 6$
340

17. $306 + 199$
505

18. $453 - 98$
355

19. $49 + 87$
136

20. $68 - 29$
39

21. $1,003 + 58$
1,061

22. $468 - 190$
278

23. $379 + 621$
1,000

24. $230 + 215 + 70$
515

25. $201 - 99$
102

26. $101 + 17 + 99$ **217**

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For another example, see Set A on page 52.

Lesson 2-1   **25**

7. $142 - 100$ because no renaming is needed