

Unit 4 Objective 2 Remediation

Commutative, Associative, and Distributive Properties

No calculators are allowed to be used on remediation.

The Commutative Properties of Addition and Multiplication allow you to add or multiply two numbers in any order.

$$a + b = b + a \text{ or } 3 + 4 = 4 + 3$$

$$a \cdot b = b \cdot a \text{ or } 4y = y \cdot 4$$

Associative Properties of Addition and Multiplication allow you to regroup three numbers; while keeping the order the same.

$$(a + b) + c = a + (b + c) \text{ or } (12 + 8) + 15 = 12 + (8 + 15)$$

$$(5 \cdot 6) \cdot 3 = 5 \cdot (6 \cdot 3)$$

Distributive Property distributes multiplication over addition or subtraction.

$$a(b + c) = ab + ac \text{ or } 5(x + 6) = 5x + 30$$

Name the property illustrated. Be specific.

1. $(23 + 4) + 19 = 23 + (4 + 19)$ _____

2. $(6 + 9) \cdot 3 = 6 \cdot 3 + 9 \cdot 3$ _____

3. $87 + 39 = 39 + 87$ _____

4. $2 \cdot (9 \cdot 7) = (2 \cdot 9) \cdot 7$ _____

5. $2.8 + 1.2 = 2.8 + 1.2$ _____

6. $8(40) - 8(25) = 8(40 - 25)$ _____

7. $7 + (18 + 26) = (7 + 18) + 26$ _____

8. $5x + 4 = x \cdot 5 + 4$ _____

9. $3(5 + y) = 15 + 3y$ _____

10. $(6 \cdot 9) \cdot 5 = 6 \cdot (9 \cdot 5)$ _____

11. $8(9 + x) = 72 + 8x$ _____

12. $18 \cdot 3 = 3 \cdot 18$ _____

Write the number that makes each statement true.

13. $27 + \underline{\hspace{2cm}} = 12 + 27$

14. $\underline{\hspace{2cm}} + 41 = 41 + 10$

15. $(8 + 20) + \underline{\hspace{2cm}} = 8 + (20 + 9)$

16. $\underline{\hspace{2cm}}(3.9 \cdot 8) = (1.9 \cdot 3.9) \cdot 8$

17. $(\underline{\hspace{2cm}})(5.2) = (5.2)(1.8)$

18. $5(4.6 - 3.8) = (5)(4.6) - (\underline{\hspace{2cm}})3.8$

19. $(12)(6) + (15)(6) = (12 + \underline{\hspace{2cm}})(6)$

20. $12.5 \cdot 4.3 = \underline{\hspace{2cm}} \cdot (12.5)$

Use properties and mental math to find each product.

21. $(5)(14.8)(2) \underline{\hspace{2cm}}$

22. $(2)(4.8)(50) \underline{\hspace{2cm}}$

23. $(20)(13)(5) \underline{\hspace{2cm}}$

24. $(34.6)(7.3)(0) \underline{\hspace{2cm}}$

25. $(4)(.56)(25) \underline{\hspace{2cm}}$

26. $(2.5)(8.6)(4) \underline{\hspace{2cm}}$

Use the Distributive Property and mental math to find the value of each expression.

27. $(17)(4) + (17)(6) \underline{\hspace{2cm}}$

28. $12(15) - 12(5) \underline{\hspace{2cm}}$

29. $(17)(16) - (17)(6) \underline{\hspace{2cm}}$

30. $13(3) + 13(7) \underline{\hspace{2cm}}$

31. $(5)(0) + (5)(2) \underline{\hspace{2cm}}$

32. $8(5) + 8(5) \underline{\hspace{2cm}}$