Key Concept and Vocabulary -

"Please Excuse My Dear Aunt Sally"

Parentheses 1st

2nd Exponents

Multiplication and Division (from left to right) 3rd

4th Addition and Subtraction (from left to right) Simplify $4^2 \div 2 + 3(9 - 5)$.

$$4^{2} \div 2 + 3(9 - 5) = 4^{2} \div 2 + 3 \cdot 4$$
$$= 16 \div 2 + 3 \cdot 4$$
$$= 8 + 12$$
$$= 20$$



Skill Examples

1.
$$18 \div 2 - 4 = 9 - 4 = 5$$

2.
$$12 \cdot (6-2) = 12 \cdot 4 = 48$$

3.
$$14 \cdot 3 - 19 = 42 - 19 = 23$$

4.
$$20 \div 10 + 21 \cdot 5 = 2 + 105 = 107$$

5.
$$(2+3)^2 - 5 = 25 - 5 = 20$$

Application Example

6. At a museum, 4 adults pay \$5 each and 6 children pay \$3 each. What is the total cost of the tickets?

$$4 \cdot 5 + 6 \cdot 3 = 20 + 18$$



The total cost is \$38.

PRACTICE MAKES PURR-FECT

Check your answers at BigIdeasMath.com. —

Simplify.

7.
$$3^2 + 5(4 - 2) = 19$$
 8. $3 + 4 \div 2 = 5$

8.
$$3 + 4 \div 2 = 5$$

9.
$$10 \div 5 \cdot 3 = 6$$

10.
$$4(3^3 - 8) \div 2 = 38$$

11.
$$3 \cdot 6 - 4 \div 2 = 16$$

10.
$$4(3^3 - 8) \div 2 = 38$$
 11. $3 \cdot 6 - 4 \div 2 = 16$ **12.** $12 + 7 \cdot 3 - 24 = 9$

Insert parentheses to make the statement true.

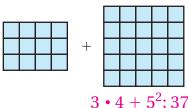
13.
$$(5^2 - 15) \div 5 = 2$$

14.
$$12 \cdot (2^3 + 4) = 144$$

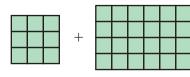
15.
$$(91 - 21) \div 7 = 10$$

Write an expression for the total area of the two rectangles. Evaluate your expression.

16.



17.



 $3^2 + 4 \cdot 6; 33$

- **18. ADMISSION** At a baseball game, 6 adults pay \$20 each and 4 children pay \$10 each. What is the total cost of the tickets? \$160
- **19. INSERTING PARENTHESES** Insert parentheses in the expression $4 + 2^3 5 \cdot 2$ in two ways: (a) so that the value is 10 and (b) so that the value is 14.

(a)
$$4 + (2^3 - 5) \cdot 2$$

(b)
$$(4+2^3-5) \cdot 2$$