

Homework: Commutative and Associative Properties

Match the properties to the expressions. Name all that fit the property.

- | | |
|--|--|
| 1. commutative property over addition: _____ | a. $2 + 6 + 8 = 2 + 8 + 6$ |
| 2. commutative property over multiplication: _____ | b. $4 \cdot (5 \cdot x) = (4 \cdot 5) \cdot x$ |
| 3. associative over addition _____ | c. $(5 + 4) + 6 = (4 + 5) + 6$ |
| 4. associative over multiplication _____ | d. $(5x + 4y) + 9m = 5x + (4y + 9m)$ |
| | e. $(6 + 2) + 8 = 8 + (6 + 2)$ |
| | f. $8 \cdot (3 \cdot 4) = (8 \cdot 3) \cdot 4$ |
| | g. $5 \cdot (4 \cdot 6) = 5 \cdot (6 \cdot 4)$ |
| | h. $(3x) + (cd) = (3x) + (dc)$ |
| | i. $(3 + 6) + 8 = 3 + (6 + 8)$ |
| | j. $5 \cdot 2 \cdot 6 = 5 \cdot 6 \cdot 2$ |

Review of all properties:

Simplify. Show steps and name the property used.

- | | |
|----------------------------------|------------------------------|
| 1. $3x + 5y + 8x + 2y$ | 2. $5(3x + 4) + 6x$ |
| 3. $2x + 3(5x + 4) + 3x$ | 4. $5 \cdot 0$ |
| 5. $\frac{1}{2} \cdot 2 \cdot 5$ | 6. $3(4x + 5) + 2(7x + 3)$ |
| 7. $15 - (3 \cdot 5)$ | 8. $5 \cdot 13 \cdot 2$ |
| 9. $6x + 4(3y + 2x) + 5y$ | 10. $15 + 7 + 6 + 3 + 4 + 5$ |