

SIMPLIFYING EXPRESSIONS

ANSWERS

COMMUTATIVE, ASSOCIATIVE, DISTRIBUTIVE PROPERTIES

Helpful Examples

$$\begin{aligned} \text{a. } & 3x + 5y - 2x \\ & = 3x - 2x + 5y \\ & = x + 5y \end{aligned}$$

MOVE NUMBERS AND
VARIABLES AROUND.

Commutative Property

$$\begin{aligned} \text{b. } & (5 \cdot 29t) \cdot 2 \\ & = 29t \cdot (5 \cdot 2) \\ & = 29t \cdot 10 \\ & = 290t \end{aligned}$$

REGROUP NUMBERS
AND VARIABLES.

Associative Property

Simplify each expression using the Commutative Property and Associative Property.

1. $(7r - 4e) + 3r$

$10r - 4e$

2. $25 \cdot 3d \cdot 4$

$300d$

3. $(5w + 2f) + (2w - f)$

$7w + f$

4. $6b - 3a - 5b$

$b - 3a$

5. $8v + (4v - 6g)$

$12v - 6g$

6. $(17n \cdot 5) \cdot 2$

$170n$

7. $(2y - 9z) + (13z - 4y)$

$4z - 2y$

8. $4 \cdot 11c \cdot 5$

$220c$

9. $3k + 9e - 6k + 8e$

$17e - 3k$

More Helpful Examples

c. $3(2 - 5m)$

$= (3 \cdot 2) - (3 \cdot 5m)$ *Distributive Property*

$= 6 - 15m$

DISTRIBUTE THE THREE.

d. $2b - (7u - 4b)$

$= 2b - 7u + 4b$ *Distributive Property*

$= 2b + 4b - 7u$ *Commutative Property*

$= 6b - 7u$

DISTRIBUTE THE
NEGATIVE SIGN.

Simplify each expression using the three properties.

10. $6(4 - 9g)$

$-54g + 24$

11. $(4x - 7a) - (6a - 4x)$

$8x - 13a$

12. $(3h - 5p)8$

$24h - 40p$

13. $11w + 2(11 - 2w)$

$7w + 22$

14. $3 \cdot 5(2c \cdot 9)$

$270c$

15. $-4(7d - 10) + 12$

$-28d + 52$

16. $11(3r - 6b)$

$33r - 66b$

17. $5(4t + 6) - 10t$

$10t + 30$

18. $(8y + 6z) - (3y + 5z)$

$5y + z$