

4.3 Distributive Property

PRACTICE

Simplify each expression by using the distributive property.

1. $4(2x + 3)$
 $8x + 12$

2. $5(m + 5)$
 $5m + 25$

3. $-4(3p - 2)$
 $-12p + 8$

4. $5(2r - 3)$
 $10r - 15$

5. $6(v + 1)$
 $6v + 6$

6. $-2(3 + x)$
 $-6 - 2x$

7. $-(5x + 2)$
 $-5x - 2$

8. $\frac{1}{2}(4b - 8)$
 $2b - 4$

9. $\frac{2}{3}(6 + 3x)$
 $\frac{2}{3}(\underline{6}) + \frac{2}{3}(\underline{3x})$
 $\frac{12}{3} + \frac{6x}{3}$
 $4 + 2x$

Simplify each expression by using the distributive property combining like terms.

10. $6y + 2(y + 1)$
 $\underline{6y + 2y + 2}$
 $\boxed{8y + 2}$

11. $2(4a - 1) + a$
 $\underline{8a - 2 + 1a}$
 $\boxed{9a - 2}$

12. $6r - 2(r + 4)$
 $\underline{6r - 2r - 8}$
 $\boxed{4r - 8}$

13. $3(m + 5) - 10$
 $\underline{3m + 15 - 10}$
 $\boxed{3m + 5}$

14. $2(3w - 5) + 3w$
 $\underline{6w - 10 + 3w}$
 $\boxed{9w - 10}$

15. $5 - 2(4x + 3)$
 $\underline{5 - 8x - 6}$
 $\boxed{-8x - 1}$

Simplify each expression by using the distributive property combining like terms.

16. $y + 3(2y + 1)$

$$\begin{array}{l} \text{Red annotations: } y + 6y + 3 \\ \text{Blue brackets: } \boxed{7y + 3} \end{array}$$

17. $5 + 2(4x - 1)$

$$\begin{array}{l} \text{Red annotations: } 5 + 8x - 2 \\ \text{Blue brackets: } \boxed{3 + 8x} \end{array}$$

18. $8 - 2(x - 4)$

$$\begin{array}{l} \text{Red annotations: } 8 - 2x + 8 \\ \text{Blue brackets: } \boxed{16 - 2x} \end{array}$$

Mr. Brust simplified the following expressions incorrectly. Help a math teacher out! Circle his mistake and show the correct answer.

19. $8 + 2(3p + 1)$

$$\begin{array}{l} \text{Red annotations: } 10(3p+1) \\ \text{Blue annotations: } \cancel{30p+10} \end{array}$$

$8 + 2(3p + 1)$

$$\begin{array}{l} \text{Blue annotations: } 8 + 6p + 2 \\ \text{Green brackets: } \boxed{10 + 6p} \end{array}$$

20.

$3d - 2(d - 4)$

$$\begin{array}{l} \text{Red annotations: } 3d - 2d \cancel{- 8} \\ \text{Blue annotations: } 1d - 8 \\ \text{Blue brackets: } \boxed{d + 8} \end{array}$$

You have to distribute the 2 first

You can't add 8 and 2 to get 10!!!

-2 times -4 is positive 8 not -8!