

ALGEBRA 1

Name

KEY

1-7 PRACTICE: THE DISTRIBUTIVE PROPERTY

Use the Distributive Property to simplify each expression.

$$\begin{aligned} 1. \quad 6(a + 10) &= 6(a) + 6(10) \\ &= 6a + 60 \end{aligned}$$

$$\begin{aligned} 2. \quad 11(2t + 3) &= 11(2t) + 11(3) \\ &= 22t + 33 \end{aligned}$$

$$\begin{aligned} 3. \quad 10(9 - n) &= 10(9) - 10(n) \\ &= 90 - 10n \end{aligned}$$

$$\begin{aligned} 4. \quad 6\left(\frac{1}{3}x + 1\right) &= 6\left(\frac{1}{3}x\right) + 6(1) \\ &= 2x + 6 \end{aligned}$$

$$\begin{aligned} 5. \quad (2 - 8c)1.5 &= (1.5)(2) - (1.5)(8c) \\ &= 3 - 12c \end{aligned}$$

$$\begin{aligned} 6. \quad -4(m + 5) &= (-4)(m) + (-4)(5) \\ &= -4m - 20 \end{aligned}$$

$$\begin{aligned} 11. \quad -8(2b - 7) &= -8(2b) - 8(-7) \\ &= -16b + 56 \end{aligned}$$

$$\begin{aligned} 12. \quad -\frac{1}{2}(4x + 10) &= -\frac{1}{2}(4x) - \frac{1}{2}(10) \\ &= -2x - 5 \end{aligned}$$

$$\begin{aligned} 13. \quad (2c - 5)7 &= 7(2c) - 7(5) \\ &= 14c - 35 \end{aligned}$$

$$\begin{aligned} 14. \quad -(a - b + 3) &= -(a) - (-b) - (3) \\ &= -a + b - 3 \end{aligned}$$

Simplify each expression into two separate simplified fractions.

$$15. \quad \frac{2p + 7}{5} = \frac{2p}{5} + \frac{7}{5}$$

$$16. \quad \frac{8 - 9x}{3} = \frac{8}{3} - \frac{9x}{3}$$

$$= \frac{8}{3} - 3x$$

$$17. \quad \frac{25 - 10m}{5} = \frac{25}{5} - \frac{10m}{5}$$

$$18. \quad \frac{42w - 8}{7} = \frac{42w}{7} - \frac{8}{7}$$

$$= 5 - 2m$$

$$= 6w - \frac{8}{7}$$

Simplify each expression by combining like terms.

$$19. 11x + 9x = 20x$$

$$20. 5m - 7m = -2m$$

$$21. -4y^2 + 9y^2 = 5y^2$$

$$22. \underline{6d} - 4 + \underline{2d} - 7$$

$$= 8d - 11$$

$$23. \underline{8a} - 7b + \underline{5a} - 3$$

$$= 13a - 7b - 3$$

$$24. \underline{-7x} + 3x^2 - \underline{4x} - 1$$

$$= 3x^2 - 11x - 1$$

$$25. \underline{6xy} + \underline{2xy} - 8xy$$

$$= 8xy - 8xy$$

$$= 0$$

$$26. 2(-3z - 5) + 1$$

$$= -6z - 10 + 1$$

$$= -6z - 9$$

Show how mental math would be used to find each product.

$$27. (5.5)(6) = (5 + 0.5)(6)$$

$$= 6(5) + 6(0.5)$$

$$= 30 + 3$$

$$= 33$$

$$28. 4(197)$$

$$= 4(200 - 3)$$

$$= 800 - 12$$

$$= 788$$

29. **Error Analysis.** A student uses the Distributive Property to simplify $4(2b - 5)$ and gets $8b - 5$ as the result.

Describe and correct the error.

The student did not distribute the 4 to the 5.

Correction $4(2b - 5) = 4(2b) - 4(5)$

$$= 8b - 20$$