

Combining Like Terms

Name _____

Date _____ Period _____

Simplify by combining like terms.

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|-------------------------------|------------|-------------------------------|-------|
| 1. $2a + 15a + 3a$ | <u>20a</u> | 2. $7x + 19x + 13x$ | _____ |
| 3. $5y - 13y + 10y$ | _____ | 4. $6c - 22c + 12c$ | _____ |
| 5. $35x + 55x + 4$ | _____ | 6. $37y + 10 + 15y$ | _____ |
| 7. $26ab + 14ab$ | _____ | 8. $12mn + 25mn$ | _____ |
| 9. $3abc - 22abc$ | _____ | 10. $15rst - 33rst$ | _____ |
| 11. $7a + 6c + 9a - 15c$ | _____ | 12. $14x + 7y - 19x + 15y$ | _____ |
| 13. $6c - 9c + 5 + 10c$ | _____ | 14. $7r + 8 + 10r - 19r$ | _____ |
| 15. $21x + 14 - 15x + 22$ | _____ | 16. $35n + 41 - 19n + 35$ | _____ |
| 17. $3xy + 3x - 5xy + 4x$ | _____ | 18. $9bc + 10c - 21c + 13bc$ | _____ |
| 19. $4x^2y + 2x^2y - 5x^2y$ | _____ | 20. $8x^3 - 7x^3 + 16x^3$ | _____ |
| 21. $15x^2y - 7x^2y + 3$ | _____ | 22. $-14a^2b + 25a^2b - 7$ | _____ |
| 23. $4x^2 + 2x - 3x^2 + 4x$ | _____ | 24. $5m^3 + 2m^2 - 7m^3 - 8m$ | _____ |
| 25. $7xy + 4yz - 10yz$ | _____ | 26. $23rs + 11st - 25st$ | _____ |
| 27. $7x^2 + 2xy - 7xy + 4y^2$ | _____ | 28. $a^2 + 7ab - 10ab + b^2$ | _____ |
| 29. $-4a^2b + 7 + 10a^2b$ | _____ | 30. $15c^3d + 18c^3d - 9$ | _____ |

5-39 Simplifying Expressions ☆

An expression can be compared to a phrase. To *simplify an expression*, you must combine similar terms and numbers so that the expression has the fewest possible terms.

Problem: Simplify the expressions below. If you simplified correctly, you will find a relationship between some of the answers. Describe the relationship.

(a) $3x - 4y - (-6x) + 4y + 7y + 6x$

(b) $3 + x - 2y + 7 + 3x + 4y - 5y$

(c) $x - (-3y) + 4x - 1x - 6y + 8 + 2$

(d) $7y - 4x - 10x + 21x - 2x$

(e) $8x - 3y + 4y - 9x + 10$

**5-40 Simplifying Expressions** ☆☆

To *simplify an expression* involves combining similar terms and combining numbers.

Problem: Each expression on the left of the equal sign can be simplified to the expression on the right. Fill in the missing terms.

(a) $9a + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + 10 = 7a + 13$

(b) $2a - 4b + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} - 3 + \underline{\hspace{2cm}} = -2a + 16b + 3$

(c) $-a - (-b) + c + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} - \underline{\hspace{2cm}} = -2a - b + 2c$

(d) $3a + 2a + 6b - 4b + 10 - \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 2b + 2$

5-41 Simplifying and Evaluating Expressions ☆

While *simplifying an expression* results in an expression with fewer terms, *evaluating an expression* results in a number.

Problem: Simplify each expression below. Then evaluate the expression if $a = -2$, $b = 3$, and $c = 5$. What do you notice about the values of the expressions?

(a) $-15 - 6c + 3b - 6c + 9 + 2a$

(b) $3a - 4a + 6a - 9b + 4c - 10$

(c) $b - 3c + 2a - c - 4b - 6a$