

Combining Like Terms

Non-Calculator: Multiple Choice

- Which of the following is equivalent to the expression $4a + 5b - 2a + 6b - 9a$?
A) $11b + 7a$
B) $11b - a$
C) $7b - 11a$
D) $11b - 7a$
- Which of the following is equivalent to the expression $x + 2y - 3z + 4z - 2x + 11y - z$?
A) $13y - x - z$
B) $13y + x$
C) $13y - x$
D) $13y - z$
- Which of the following is equivalent to the expression $x^2 + 5y^2 - xy + 4x^2 - 3x$?
A) $x^2 + 5y^2 - xy - 7x$
B) $5x^2 + 5y^2 - xy - 3x$
C) $6xy^2 - 3x$
D) $5y^2 - 3x^2 - xy - 3x$
- Which of the following is equivalent to the expression $(x^2y + 4x - 3y + x^2 - x) - (4x^2 - 3xy - 2x^2y + 3x)$?
A) $3x^2y - 3xy - 3x^2 + 3y$
B) $3x^2y - 3xy + 3x^2 - 3y$
C) $3x^2y + 3xy + 3x^2 - 3y$
D) $3x^2y + 3xy - 3x^2 - 3y$
- Which of the following is equivalent to the expression $(x^3y + 2x^2 - 3xy + x) - (2x^3y - 3y + xy + 5x)$?
A) $-x^3y + 2x^2 - 11xy$
B) $-x^3y + 2x^2 - 4xy + 3y - 4x$
C) $x^3y + 2x^2 - 8xy + 3y$
D) $x^3y + 2x^2 + 4xy - 3y + 4$

6. Which of the following is equivalent to the expression $(3x^2y + 2xy^2 + 2x + y + 4) + (x^2y + 3x - 3)$?

A) $3x^2y + 2x^2y + 5x + xy^2 + y + 1$
 B) $4x^3y + 2xy^2 + 5x + y + 7$
 C) $4x^2y + 2xy^2 + 5x + y + 1$
 D) $4x^2y + 5x + y + 7$

Non-Calculator: Grid In

7. Kaitlyn simplifies the following problem by combining like terms.

$$(x^4 + 3x^2 - 2xy + y^4 - 4) + (4xy - 2x^4 + 3y^4 + 2)$$

To create a math problem for her twin sister to solve, Kaitlyn replaces one of the coefficients of her solution with a variable, k . What is the value of k in the simplified equation below?

$$3x^2 - x^4 + 2xy + ky^4 - 2$$

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8. George simplifies the following equation by combining like terms.

$$3(2x + 1)(4x + 1)$$

He obtains the solution $24x^2 + 13x + 3$, but his teacher says that he needs to recalculate one of his coefficients. What is the correct value for the coefficient in question?

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Calculator: Multiple Choice

9. Jenn is waiting to get her nails done and passes the time by playing a number game. She thinks of a number, x , doubles it and then squares the result. She then adds it to a new number, y , and then times the result by her original number. She then subtracts the original number and adds a new number, z . How would you summarize Jenn's overall expression?
- A) $2x^3 + 2xy - x + z$
 B) $4x^3 + 2xy - x + 2z$
 C) $2x^3 + xy - 2x + z$
 D) $4x^3 + xy - x + z$
10. Peter was relaxing in his garden, admiring his 10 watermelons, 11 eggplants, and 27 courgettes. However, Peter lives in Ireland, and when the remnants of hurricane Ophelia hit he lost 3 watermelons, 7 eggplants and 7 courgettes. His neighbor felt bad for Peter and gave him 3 eggplants and a watermelon. He then sold 5 of his courgettes to make a cameo in the Swiss-French film 'My Life as a Courgette'. As the season turned, he lost two of each plant to the October frost. At the end of this ordeal, how many plants does Peter have left?
- A) 20
 B) 22
 C) 24
 D) 25

Calculator: Grid In

11. What value of k makes the two functions below equal?

$$f(x, y) = 8x(4x - ky) - 6y^2 + 4xy - 7x^2$$

$$g(x, y) = 25x^2 - 20xy - 6y^2$$

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