

A.APR.A.1 Operations with Polynomials 2b

- 1 The expression $3(x + 4) - (2x + 7)$ is equivalent to
- 2 Which expression is equivalent to $2(3g - 4) - (8g + 3)$?
- 3 The expression $3(x^2 - 1) - (x^2 - 7x + 10)$ is equivalent to
- 4 The expression $3(x^2 + 2x - 3) - 4(4x^2 - 7x + 5)$ is equivalent to
- 5 If $C = 2a^2 - 5$ and $D = 3 - a$, then $C - 2D$ equals
- 6 If $A = 3x^2 + 5x - 6$ and $B = -2x^2 - 6x + 7$, then $A - B$ equals
- 7 Express in simplest form:
 $(3x^2 + 4x - 8) - (-2x^2 + 4x + 2)$
- 8 Subtract $5x^2 + 2x - 11$ from $3x^2 + 8x - 7$. Express the result as a trinomial.
- 9 If $C = G - 3F$, find the trinomial that represents C when $F = 2x^2 + 6x - 5$ and $G = 3x^2 + 4$.

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Answer Section

1 ANS:

$$\begin{aligned} &x + 5 \\ 3(x + 4) - (2x + 7) &= 3x + 12 - 2x - 7 = x + 5 \end{aligned}$$

REF: 062102ai

2 ANS:

$$\begin{aligned} &-2g - 11 \\ 2(3g - 4) - (8g + 3) &= 6g - 8 - 8g - 3 = -2g - 11 \end{aligned}$$

REF: 011707ai

3 ANS:

$$\begin{aligned} &2x^2 + 7x - 13 \\ 3(x^2 - 1) - (x^2 - 7x + 10) \\ &3x^2 - 3 - x^2 + 7x - 10 \\ &2x^2 + 7x - 13 \end{aligned}$$

REF: 061610ai

4 ANS:

$$\begin{aligned} &-13x^2 + 34x - 29 \\ 3(x^2 + 2x - 3) - 4(4x^2 - 7x + 5) &= 3x^2 + 6x - 9 - 16x^2 + 28x - 20 = -13x^2 + 34x - 29 \end{aligned}$$

REF: 061803ai

5 ANS:

$$\begin{aligned} &2a^2 + 2a - 11 \\ 2a^2 - 5 - 2(3 - a) &= 2a^2 - 5 - 6 + 2a = 2a^2 + 2a - 11 \end{aligned}$$

REF: 011911ai

6 ANS:

$$5x^2 + 11x - 13$$

REF: 061403ai

7 ANS:

$$5x^2 - 10$$

REF: 061725ai

8 ANS:

$$-2x^2 + 6x + 4$$

REF: 011528ai

9 ANS:

$$C = 3x^2 + 4 - 3(2x^2 + 6x - 5) = 3x^2 + 4 - 6x^2 - 18x + 15 = -3x^2 - 18x + 19$$

REF: 061926ai

Multiply:

1. $(x+6)(x+9)$

[A] $x^2 + 54x + 15$

[B] $x^2 + 15x + 54$

[C] $x^2 + 54x + 54$

[D] $x^2 + 54$

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

[A] $x^2 + 12$

[B] $x^2 + 8x + 12$

[C] $x^2 + 12x + 8$

[D] $x^2 + 12x + 12$

3. $(x+3)(x+4)$

[A] $x^2 + 12x + 7$

[B] $x^2 + 12$

[C] $x^2 + 12x + 12$

[D] $x^2 + 7x + 12$

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

5. $(x+3)(x-8)$

6. $(x+8)(x-3)$

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

8. $(2x-5)(2x+7)$

[A] $4x^2 + 4x - 35$

[B] $4x^2 - 4x - 35$

[C] $4x^2 + 24x - 35$

[D] $4x^2 + 4x + 35$

Multiply:

9. $(3x+4)(5x+8)$

[A] $15x^2 + 44x + 32$

[B] $15x^2 - 44x + 32$

[C] $15x^2 + 4x + 32$

[D] $15x^2 + 44x - 32$

13. $(2x-8)(x-3)$

14. $(x-4)(7x-3)$

10. $(2x-5)(4x-1)$

[A] $8x^2 + 18x + 5$

[B] $8x^2 - 22x + 5$

[C] $8x^2 + 22x + 5$

[D] $8x^2 - 22x - 5$

15. $(x+8)(5x+4)$

11. $(4x-7)(x-5)$

12. $(x+6)(3x+5)$

Algebra I Practice A.APR.A.1: Operations with Polynomials 4

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[1] B

[2] B

[3] D

[4] $x^2 + 3x - 10$

[5] $x^2 - 5x - 24$

[6] $x^2 + 5x - 24$

[7] $x^2 - 3x - 10$

[8] A

[9] A

[10] B

[11] $4x^2 - 27x + 35$

[12] $3x^2 + 23x + 30$

[13] $2x^2 - 14x + 24$

[14] $7x^2 - 31x + 12$

[15] $5x^2 + 44x + 32$

1. Which expression is the simplified form of $-6 + 3x - y - 4x + 4y + 5$?

[A] $-x + 3y - 1$ [B] $7x + 5y - 11$
 [C] $3y - 2$ [D] $-7x + 5y + 1$
 [E] $3y$

6. Simplify the polynomial:

$$6n^2 - 2n - 3 + 5n^2 - 9n - 6$$

[A] $n^2 - 11n + 3$ [B] $11n^2 - 11n - 9$
 [C] $11n^2 + 7n - 9$ [D] $n^2 + 7n + 3$

Simplify:

2. $y + (-8) + (-5x) + 2y - (-7x)$

[A] $2x + 3y - 8$ [B] $-12x + 3y + 8$
 [C] $2x + y + 8$ [D] $-12x + y - 8$

3. $(-2y) + 8 + 9x + (-4y) - 7x$

[A] $2x - 2y - 8$ [B] $16x - 6y - 8$
 [C] $2x - 6y + 8$ [D] $16x - 2y + 8$

4. $(-4y) + (-2) + 6x + 9y - 7x$

[A] $13x + 13y - 2$ [B] $-x + 13y + 2$
 [C] $-x + 5y - 2$ [D] $13x + 5y + 2$

5. Simplify the polynomial:

$$8c^2 - c + 3 + 2c^2 - c - 2$$

[A] $10c^2 + 1$ [B] $6c^2 - 2c + 5$
 [C] $10c^2 - 2c + 1$ [D] $6c^2 + 5$

Simplify:

7. $-2x - 6y + 4x + 9y$

8. $-9x + 8y - 8x - 2y$

9. $7x - y - 5x + 5y$

10. Compare the quantities in Column A and Column B. Which statement is true for all values of x ?

Column A

Column B

$$4(x - 3)$$

$$12x - 4 - 8(x + 1)$$

- [A] The quantity in Column A is greater.
 [B] The quantity in Column B is greater.
 [C] The quantities are equal.
 [D] The relationship cannot be determined from the information given.

Algebra I Practice A.APR.A.1: Simplifying Expressions

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[1] A

[2] A

[3] C

[4] C

[5] C

[6] B

[7] $2x + 3y$

[8] $-17x + 6y$

[9] $2x + 4y$

[10] C

date _____ section _____ Name _____

CLASSWORK - Combining Like Terms & Distributive Property

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Combine like terms to simplify each expression.

1) $-4x + 5x$

2) $1 + 5v + v - 6$

3) $4n + 4 + 1 + 3n$

4) $11a + 11a$

5) $-2x - 8 - 7x + 2$

6) $7v + 6v$

7) $-8x - 10x$

8) $6 - 7n - 2n - 8$

9) $2k - k$

10) $-p - 11 + 3$

11) $9n + 3n$

12) $12x + 11 - 4$

Use Distributive Property.

13) $3(-7 - 8n)$

14) $-8(1 + 5m)$

15) $8(r + 1)$

16) $8(7x + 8)$

17) $2(6n - 8)$

18) $-3(8 - b)$

19) $-5(8v - 2)$

20) $-2(x - 5)$

21) $-(3a - 3)$

22) $-2(7 - 2n)$

23) $-8(5 - 3v)$

24) $-7(6x - 3)$

First, use Distributive Property, then Combine Like Terms to simplify each expression.

25) $-n + 4(n + 1)$

26) $-3(1 - 3x) + 2x$

27) $-2(-3k + 4) - 7$

28) $-3p - (-8 + 4p)$

29) $-4 + 6(-4x + 3)$

30) $3n + 3(1 + 8n)$

31) $-2 + 5(4 + 3r)$

32) $-1 + 3(m + 4)$

33) $-(-n + 2) - 2n$

34) $-3(5 + 2x) - 7$

DISTRIBUTIVE PROPERTY, Combining Like Terms

Use the **DISTRIBUTIVE PROPERTY**, then **SIMPLIFY** each expression by adding/combining **LIKE TERMS**.

1) $2(1 + 8a)$

2) $2(3n + 9)$

3) $7(5x - 3)$

4) $8(6x - 7)$

5) $2(10n + 7)$

6) $-3(3 + 4x)$

7) $9(-7x + 5)$

8) $-3(8x - 7)$

9) $-3 - 8(3n - 7)$

10) $-9 + 2(1 - 3v)$

11) $6p - 7(6p - 4)$

12) $-x - (1 + 6x)$

$$13) 9(-5a + 3) - 4$$

$$14) 1 - 8(1 + 9p)$$

$$15) 4(v - 8) + 9v$$

$$16) 2x + 3(x - 1)$$

$$17) 2(k + 1) + 6(7 + 10k)$$

$$18) 6(n - 8) - 9(1 - 10n)$$

$$19) 10(1 - 5a) + 2(1 + a)$$

$$20) 9(9 + 5n) - 3(3n + 6)$$

$$21) -(2n - 7) - 3(5 - 2n)$$

$$22) -(x + 3) + 8(1 - 6x)$$

$$23) -9(1 - 9a) + 7(2 + 9a)$$

$$24) 4(-9x - 1) - 6(x + 8)$$