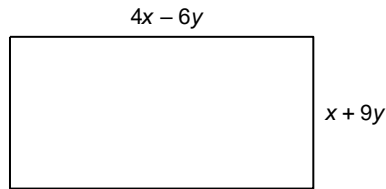


Expanding & Simplifying Polynomials Worksheet

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Which polynomial, written in simplified form, represents the area of this rectangle?



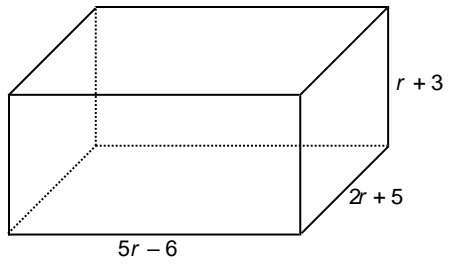
- a. $4x^2 - 30xy - 54y^2$ c. $8x^2 + 60xy - 108y^2$
b. $4x^2 + 21xy - 54y^2$ d. $4x^2 + 30xy - 54y^2$

Short Answer

- Expand and simplify: $(8k + 1)(3k^2 - 6k + 1)$
- Expand and simplify: $(9m - 11n)^2$
- Expand and simplify: $(2s + 9t)(7s - 8t - 9)$
- Expand and simplify: $(3d - 1)(5d^2 + 12d - 4)$
- Expand and simplify: $(f + 7g)(2f - 5g + 7)$
- Expand and simplify: $(n^2 - 2n + 3)(-4n^2 + 3n + 6)$
- Expand and simplify: $(6p + 5)(6p - 5) - (7p - 8)(p - 3)$
- Expand and simplify: $(4a - b - 3)(3a - 7) - (5a + 2b)^2$
- Expand and simplify $3(4x - 1)(2x + 3) + (5x - 3)^2$
- $(x + 5)(x^2 + 6x - 2) + (x + 1)(x - 2)(x + 3)$

Problem

- A student says that the expression $10r^3 + 5r^2 - 105r - 90$ represents the volume of this right rectangular prism.
Is the student correct? How do you know?



Expanding & Simplifying Polynomials Worksheet Answer Section

MULTIPLE CHOICE

1. ANS: D

SHORT ANSWER

2. ANS:

$$24h^3 - 45h^2 + 2h + 1$$

3. ANS:

$$81m^2 - 198mn + 121n^2$$

4. ANS:

$$14s^2 + 47st - 18s - 72t^2 - 81t$$

5. ANS:

$$15d^3 + 31d^2 - 24d + 4$$

6. ANS:

$$2f^2 + 9fg + 7f - 35g^2 + 49g$$

7. ANS:

$$-4n^4 + 11n^3 - 12n^2 - 3n + 18$$

8. ANS:

$$29p^2 + 29p - 49$$

9. ANS:

$$-13a^2 - 37a - 23ab + 7b + 21 - 4b^2$$

10. ans:

$$49y^2$$

11. ans:

$$2x^3 + x^2 - 27x - 16$$

PROBLEM

12. ANS:

Use the formula for the volume, V , of a right rectangular prism:

$$V = lwh$$

$$V = (5r - 6)(2r + 5)(r + 3)$$

$$V = (10r^2 + 25r - 12r - 30)(r + 3)$$

$$V = (10r^2 + 13r - 30)(r + 3)$$

$$V = 10r^2(r) + 10r^2(3) + 13r(r) + 13r(3) - 30(r) - 30(3)$$

$$V = 10r^3 + 43r^2 + 9r - 90$$

Since this expression does not match the student's expression, the student is incorrect.

The expression $10r^3 + 43r^2 + 9r - 90$ represents the volume of the right rectangular prism.