

Polynomials Worksheet

Algebra

Grades 9-12

Skill Questions

Name:

1 Identify the degree of the polynomial $3x^4 - 2x^3 + 5x^2 - 7$.



2 Simplify the expression $2x^3 + 4x^2 - 3x^3 + x^2$.



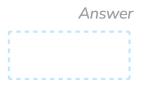
3 Determine the leading term in the polynomial $6y^2 - 3y + 4y^3 - 2$.



4 Factor the polynomial $x^2 - 4$.



5 Add the polynomials $3a^2 - 5a + 2$ and $4a^2 + 7a - 1$.



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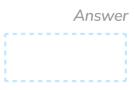
6 Write the polynomial $5b - 2b^2 + 3$ in standard form.

Answer

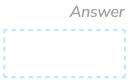
7 Multiply the polynomials 2c + 3 and c - 1.



8 Identify the constant term in the polynomial $4x^2 - 6x + 9$.



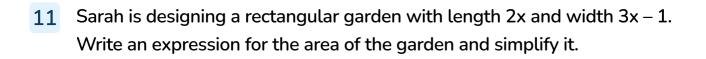
9 Subtract the polynomial $2y^3 - 3y^2 + 7$ from $y^3 + 4y^2 - 1$.

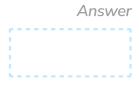


10 Solve the equation $x^2 - 9 = 0$ by factoring.

Answer

Applied Questions

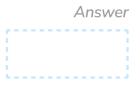




A company sells 5 products, each represented by the polynomial $3y^2 + 2y - 1$. Write an expression for the total revenue when x products are sold.



The perimeter of a rectangular field is 8x + 6. If the length of the field is 2x - 1, write an expression for the width and simplify it.



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14	A polynomial $ax^2 + bx + c$ represents the profit function for a business. If $a =$
	2, b = -3 , and c = 7, find the value of the polynomial when x = 4.

Answer

Mark is organizing a fundraising event where 3 different activities generate the following polynomials: $4p^2 - 2p + 5$, 3p - 1, and $2p^2 + 3$. Write an expression for the total funds raised when p participants join all three activities.

Answer

Answers

Question number	Question	Answers	Standard
1	Identify the degree of the polynomial $3x^4 - 2x^3 + 5x^2 - 7$.	4	HSA.APR. A.1
2	Simplify the expression $2x^3 + 4x^2 - 3x^3 + x^2$.	-x ³ +5x ²	HSA.APR. A.1
3	Determine the leading term in the polynomial $6y^2 - 3y + 4y^3 - 2$.	4y³	HSA.APR. A.1
4	Factor the polynomial x² – 4.	(x-2)(x+2)	HSA.APR. A.1
5	Add the polynomials $3a^2 - 5a + 2$ and $4a^2 + 7a - 1$.	7a² + 2a + 1	HSA.APR. A.1
6	Write the polynomial 5b – 2b² + 3 in standard form.	$-2b^2 + 5b + 3$	HSA.APR. A.1
7	Multiply the polynomials $2c + 3$ and $c - 1$.	2c² + c –3	HSA.APR. A.1
8	Identify the constant term in the polynomial $4x^2 - 6x + 9$.	9	HSA.APR. A.1
9	Subtract the polynomial $2y^3 - 3y^2 + 7$ from $y^3 + 4y^2 - 1$.	$-y^3 + 7y^2 - 8$	HSA.APR. A.1
10	Solve the equation $x^2 - 9 = 0$ by factoring.	x = -3,3	HSA.APR. A.1

Polynomials Worksheet | Grades 9-12 | Answers

Question number	Question	Answers	Standard
11	Sarah is designing a rectangular garden with length 2x and width 3x – 1. Write an expression for the area of the garden and simplify it.	Area expression: 2x(3x – 1) Simplified: 6x²–2x	HSA.APR. A.1
12	A company sells 5 products, each represented by the polynomial 3y ² + 2y – 1. Write an expression for the total revenue when x products are sold.	Revenue expression: $5(3y^2 + 2y - 1)$ Simplified expression: $15y^2 + 10y - 5$	HSA.APR. A.1
13	The perimeter of a rectangular field is $8x + 6$. If the length of the field is $2x - 1$, write an expression for the width and simplify it.	Width: (8x + 6)/2 – (2x – 1) Simplified expression: 2x + 4	HSA.APR. A.1
14	A polynomial $ax^2 + bx + c$ represents the profit function for a business. If a = 2, b = -3, and c = 7, find the value of the polynomial when x = 4.	Profit: $2x^2 - 3x + 7$ When $x = 4$ the polynomial = 27	HSA.APR. A.1
15	Mark is organizing a fundraising event where 3 different activities generate the following polynomials: $4p^2 - 2p + 5$, $3p - 1$, and $2p^2 + 3$. Write an expression for the total funds raised when p participants join all three activities.	Total funds: $4p^2 - 2p + 5 + 3p - 1 + 2p^2 + 3$ Simplified expression: $6p^2 + p + 7$	HSA.APR. A.1

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