

Algebra 1
Adding and Subtracting Polynomials

Adding and Subtracting Polynomials | A1-U08-P02

96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
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Topic focus
This topic is a focused set of 96 practice tasks on Adding and Subtracting Polynomials.
8 PDFs and a README; 78 buyer pages.

Algebra 1

Adding and Subtracting Polynomials

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

Verify the three upper-degree cancellations and give the lower-degree sum. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements.

Variable	w
Addends	$w^{11} + 2w^7 - w, -4w^{11} + w^4 + 3,$ $3w^{11} - 2w^7 - w^4 + 5w$

Bank label: _____

Use sixths to test both high-degree columns, then finish the lower-degree sum. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements.

Variable	y
Addends	$(\frac{5}{6})y^8 - (\frac{2}{3})y^5 + y,$ $-(\frac{1}{3})y^8 + (\frac{7}{6})y^5 - 2,$ $-(\frac{1}{2})y^8 - (\frac{1}{2})y^5 - 3y + 5$

Bank label: _____

Create signed totals from power 9 down to power 0 and simplify the four-polynomial sum. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements.

Variable	x
Addends	$3x^9 - 2x^6 + x^2, -5x^9 + x^7 + 4x^6,$ $2x^9 - x^7 - 2x^6 + 3x, -x^2 + 8$

Bank label: _____

Interpret the three coefficient maps, combine matching powers, and write the polynomial they sum to. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements.

Variable	z
Addends	(Power 7 4; Power 3 -2; Power 0 1), (Power 7 -1; Power 5 6; Power 3 5), (Power 7 -3; Power 5 -6; Power 1 2; Power 0 -4)

Bank label: _____

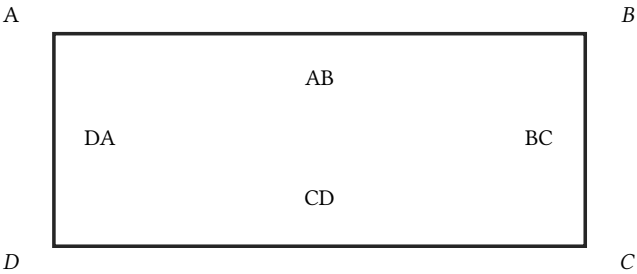
Algebra 1

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Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

The diagram lists every side of rectangle ABCD. Combine the four labels to express its perimeter.



Boundary order only; not drawn to scale. Exact labels are in the table.

Shape	rectangle ABCD	
Boundary order	AB, BC, CD, DA	
Segment labels	AB	$3x + 2$
	BC	$x + 5$
	CD	$3x + 2$
	DA	$x + 5$
Included segments	AB, BC, CD, DA	
Units	meters	

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Name: _____ Date: _____ Class: _____

Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: $-d + 6$. Simplify the high powers and state the final standard form. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Variable</td> <td>u</td> </tr> <tr> <td>Addends</td> <td>$u^6 - 2u^3 + u, 4u^3 - 5, -u^6 - 2u^3 + 3u + 1$</td> </tr> </table> Your response: _____	Variable	u	Addends	$u^6 - 2u^3 + u, 4u^3 - 5, -u^6 - 2u^3 + 3u + 1$	Incoming: $5m^2 + 2m + 5$. Add without inserting unnecessary zero terms in the final standard form. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Variable</td> <td>p</td> </tr> <tr> <td>Addends</td> <td>$p^{10} + p, -4p^7 + 2, 3p^7 - 5p + 6$</td> </tr> </table> Your response: _____	Variable	p	Addends	$p^{10} + p, -4p^7 + 2, 3p^7 - 5p + 6$
Variable	u								
Addends	$u^6 - 2u^3 + u, 4u^3 - 5, -u^6 - 2u^3 + 3u + 1$								
Variable	p								
Addends	$p^{10} + p, -4p^7 + 2, 3p^7 - 5p + 6$								
Incoming: $3v^6 - 2v^2 + 7$. Align the missing columns and write the total in standard form. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Variable</td> <td>x</td> </tr> <tr> <td>Addends</td> <td>$x^3 - 4x + 9, -2x^2 + 7x - 1, 5x^2 - 3$</td> </tr> </table> Your response: _____	Variable	x	Addends	$x^3 - 4x + 9, -2x^2 + 7x - 1, 5x^2 - 3$	Incoming: $2s - 7$. Add the decimal coefficient pairs and express whole-number totals simply. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Variable</td> <td>t</td> </tr> <tr> <td>Addends</td> <td>$0.75t^4 - 0.5t + 2, 0.25t^4 + 1.5t - 6$</td> </tr> </table> Your response: _____	Variable	t	Addends	$0.75t^4 - 0.5t + 2, 0.25t^4 + 1.5t - 6$
Variable	x								
Addends	$x^3 - 4x + 9, -2x^2 + 7x - 1, 5x^2 - 3$								
Variable	t								
Addends	$0.75t^4 - 0.5t + 2, 0.25t^4 + 1.5t - 6$								
START Combine the rational cubic coefficients and simplify every other column. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Variable</td> <td>z</td> </tr> <tr> <td>Addends</td> <td>$(\frac{1}{2})z^3 - 2z, (\frac{3}{4})z^3 + 5z - 1$</td> </tr> </table> Your response: _____	Variable	z	Addends	$(\frac{1}{2})z^3 - 2z, (\frac{3}{4})z^3 + 5z - 1$	Incoming: $(\frac{1}{2})r^5 - r^2 + 5$. Simplify the seventh-, fifth-, first-, and zero-power columns in turn. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Variable</td> <td>s</td> </tr> <tr> <td>Addends</td> <td>$s^7 - 3s + 2, -2s^7 + s^5 + s, s^7 - s^5 + 4s - 9$</td> </tr> </table> Your response: _____	Variable	s	Addends	$s^7 - 3s + 2, -2s^7 + s^5 + s, s^7 - s^5 + 4s - 9$
Variable	z								
Addends	$(\frac{1}{2})z^3 - 2z, (\frac{3}{4})z^3 + 5z - 1$								
Variable	s								
Addends	$s^7 - 3s + 2, -2s^7 + s^5 + s, s^7 - s^5 + 4s - 9$								

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Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

Add the two polynomials by matching equal powers. Choose an organization method: align equal powers in coefficient columns, or collect matching signed terms horizontally. Explain why your choice fits these polynomials, use it, and keep every missing-power position and sign correct.

Variable	x
Addends	$3x^2 + 2x - 5, 4x^2 - x + 7$

Find the standard-form sum of the displayed binomials. Choose an organization method: align equal powers in coefficient columns, or collect matching signed terms horizontally. Explain why your choice fits these polynomials, use it, and keep every missing-power position and sign correct.

Variable	y
Addends	$5y^3 - 2, -2y^3 + 6$

Adding and Subtracting Polynomials

Full Worked Solutions - excerpt

Worked example

Problem. Verify the three upper-degree cancellations and give the lower-degree sum. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements.

Variable	w
Addends	$w^{11} + 2w^7 - w, -4w^{11} + w^4 + 3, 3w^{11} - 2w^7 - w^4 + 5w$

Answer. $4w + 3$.

Explanation and check.

Powers 11, 7, and 4 all total zero; $-w + 5w = 4w$ and the constant is 3.

Worked example

Problem. Add each represented degree and report the sparse remainder. Use the complete simplified polynomial as the matching response and retain the original work and sign requirements.

Variable	d
Addends	$5d^8 - d^5 + 2d^2, -2d^8 + 4d^5 - d, -3d^8 - 3d^5 - 2d^2 + 6$

Answer. $-d + 6$.

Explanation and check.

Powers 8, 5, and 2 each total zero; the unmatched lower terms are $-d$ and 6.