

Algebra 1
Monomial Times Polynomial

Monomial Times Polynomial | A1-U08-P04

96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
08	Terms of Use & License	included

Topic focus
This topic is a focused set of 96 practice tasks on Monomial Times Polynomial.
8 PDFs and a README; 68 buyer pages.

Algebra 1

Monomial Times Polynomial

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.

Form three exact products while keeping c and d exponent sums separate. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="151 537 797 569"> <tr> <td>Expression</td> <td>$7c^2d(-2c^3 + 3cd - d^2)$</td> </tr> </table> _____ Bank label: _____	Expression	$7c^2d(-2c^3 + 3cd - d^2)$	Apply the same r^2s^3 factor to every inside term. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="828 512 1471 543"> <tr> <td>Expression</td> <td>$3r^2s^3(2rs - 5s^2 + 4)$</td> </tr> </table> _____ Bank label: _____	Expression	$3r^2s^3(2rs - 5s^2 + 4)$
Expression	$7c^2d(-2c^3 + 3cd - d^2)$				
Expression	$3r^2s^3(2rs - 5s^2 + 4)$				
Expand, taking special care with the negative middle term. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="151 871 797 903"> <tr> <td>Expression</td> <td>$-2x^2y(3xy^2 - 4x^2 + y^3)$</td> </tr> </table> _____ Bank label: _____	Expression	$-2x^2y(3xy^2 - 4x^2 + y^3)$	Multiply the outside monomial by the two variable terms and the constant. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="828 871 1471 903"> <tr> <td>Expression</td> <td>$4ab^3(-a^2b + 2ab^2 - 3)$</td> </tr> </table> _____ Bank label: _____	Expression	$4ab^3(-a^2b + 2ab^2 - 3)$
Expression	$-2x^2y(3xy^2 - 4x^2 + y^3)$				
Expression	$4ab^3(-a^2b + 2ab^2 - 3)$				
Distribute $-8r^2s$ and simplify both fractional coefficient products. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="151 1207 797 1239"> <tr> <td>Expression</td> <td>$-8r^2s((\frac{1}{4})r^3s^2 - (\frac{1}{2})rs + 3)$</td> </tr> </table> _____ Bank label: _____	Expression	$-8r^2s((\frac{1}{4})r^3s^2 - (\frac{1}{2})rs + 3)$	Multiply each decimal coefficient and preserve the c-d exponent pattern. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="828 1207 1471 1239"> <tr> <td>Expression</td> <td>$2.5cd^2(4c^2 - 1.2cd + 0.8d^2)$</td> </tr> </table> _____ Bank label: _____	Expression	$2.5cd^2(4c^2 - 1.2cd + 0.8d^2)$
Expression	$-8r^2s((\frac{1}{4})r^3s^2 - (\frac{1}{2})rs + 3)$				
Expression	$2.5cd^2(4c^2 - 1.2cd + 0.8d^2)$				
Track four sign interactions produced by the negative outside factor. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="151 1543 797 1575"> <tr> <td>Expression</td> <td>$-7mn^2(-2m^3 + 3mn - 5n^2 + 1)$</td> </tr> </table> _____ Bank label: _____	Expression	$-7mn^2(-2m^3 + 3mn - 5n^2 + 1)$	Produce one exact product for each of the four sparse terms. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="828 1543 1471 1575"> <tr> <td>Expression</td> <td>$2p^2q^3(3p^4 - 2p^2q + q^2 - 6)$</td> </tr> </table> _____ Bank label: _____	Expression	$2p^2q^3(3p^4 - 2p^2q + q^2 - 6)$
Expression	$-7mn^2(-2m^3 + 3mn - 5n^2 + 1)$				
Expression	$2p^2q^3(3p^4 - 2p^2q + q^2 - 6)$				

Algebra 1

Monomial Times Polynomial

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.

A one-row product table has row factor $3x$. Fill the missing cell under the column term $-x$.

$\times$	$2x^2$	$-x$	4
$3x$	$6x^3$	_____	$12x$

The diagram sends the common factor $-2a^2$ to each of three column terms. What belongs in the branch ending at b ?

$\times$	$3a$	-4	b
$-2a^2$	$-6a^3$	$8a^2$	_____

Use the labeled row factor and the middle product cell to recover the missing column term.

$\times$	$2m^2$	?	4
$5m$	$10m^3$	$-15m^2$	$20m$

Exactly one cell in the row does not equal its row factor times column term. Identify and repair it.

$\times$	$2p$	-3	q
$4p^2$	$8p^3$	$-12p$	$4p^2q$

Algebra 1

Monomial Times Polynomial

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: $-6t^5 - 2.4t^3 + 12t$. Reduce the denominator 5 against each coefficient and combine powers. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="151 604 795 646"> <tr> <td>Expression</td> <td>$(\frac{3}{5})p^2q(10p^3 - 5pq^2 + 15q)$</td> </tr> </table> Your response: _____	Expression	$(\frac{3}{5})p^2q(10p^3 - 5pq^2 + 15q)$	Incoming: $-5x^6 + 2x^4 - x^3 + 9x^2$. Scale the three coefficients by 1.5 and combine matching bases. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="828 604 1469 646"> <tr> <td>Expression</td> <td>$1.5pq^2(2p^3 - 4pq + 6q^2)$</td> </tr> </table> Your response: _____	Expression	$1.5pq^2(2p^3 - 4pq + 6q^2)$
Expression	$(\frac{3}{5})p^2q(10p^3 - 5pq^2 + 15q)$				
Expression	$1.5pq^2(2p^3 - 4pq + 6q^2)$				
Incoming: $6m^7 - 12m^5 + 3m^3 - 18m^2$. State the expanded result and explain what happens to the four distinct terms. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="151 1039 795 1081"> <tr> <td>Expression</td> <td>$0(7x^6 - 3x^2y + 5y^4 - 11)$</td> </tr> </table> Your response: _____	Expression	$0(7x^6 - 3x^2y + 5y^4 - 11)$	Incoming: $-1.5y^2 + y$. Expand the three groups separately and then total each degree column. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="828 1039 1469 1081"> <tr> <td>Expression</td> <td>$2t(t^2 - t + 3) + 3t(-t^2 + 2t - 1) - t(t^2 + 4)$</td> </tr> </table> Your response: _____	Expression	$2t(t^2 - t + 3) + 3t(-t^2 + 2t - 1) - t(t^2 + 4)$
Expression	$0(7x^6 - 3x^2y + 5y^4 - 11)$				
Expression	$2t(t^2 - t + 3) + 3t(-t^2 + 2t - 1) - t(t^2 + 4)$				
Incoming: $3y^5 - 2y^3 + 4y^2$. Multiply the decimal factor across the sparse polynomial. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="151 1465 795 1507"> <tr> <td>Expression</td> <td>$-1.2t(5t^4 + 2t^2 - 10)$</td> </tr> </table> Your response: _____	Expression	$-1.2t(5t^4 + 2t^2 - 10)$	Incoming: $-2t^3 + 4t^2 - t$. After distributing, determine the single term left by cancellation. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements. <table border="1" data-bbox="828 1465 1469 1507"> <tr> <td>Expression</td> <td>$4c(c^2 - d) + 2c(-2c^2 + 3d)$</td> </tr> </table> Your response: _____	Expression	$4c(c^2 - d) + 2c(-2c^2 + 3d)$
Expression	$-1.2t(5t^4 + 2t^2 - 10)$				
Expression	$4c(c^2 - d) + 2c(-2c^2 + 3d)$				

Algebra 1

Monomial Times Polynomial

Name: _____ Date: _____ Class: _____

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.

Distribute the monomial to both terms. Choose a distribution organization: use a one-row partial-product table, or connect the outside monomial to each signed term directly in order. Explain your choice, use it, and retain every original sign and requested term order.

Expression	$2x(x + 3)$
------------	-------------

Apply the outside factor to the variable term and the constant. Choose a distribution organization: use a one-row partial-product table, or connect the outside monomial to each signed term directly in order. Explain your choice, use it, and retain every original sign and requested term order.

Expression	$3a(a - 4)$
------------	-------------

Track the negative multiplier across the entire binomial. Choose a distribution organization: use a one-row partial-product table, or connect the outside monomial to each signed term directly in order. Explain your choice, use it, and retain every original sign and requested term order.

Expression	$-2m(m + 5)$
------------	--------------

Find both partial products and give the expanded polynomial. Choose a distribution organization: use a one-row partial-product table, or connect the outside monomial to each signed term directly in order. Explain your choice, use it, and retain every original sign and requested term order.

Expression	$4p(2p + 1)$
------------	--------------

Monomial Times Polynomial

Full Worked Solutions - excerpt

Worked example

Problem. Expand the product and verify whether every resulting term has the same total degree.

Expression	$5a^2b(-2a^3b^2 + 3ab^4 - 4b^5)$
------------	----------------------------------

Answer. $-10a^5b^3 + 15a^3b^5 - 20a^2b^6$; every term has total degree 8.

Explanation and check.

Distribution gives the three monomials shown. Their exponent sums are $5 + 3$, $3 + 5$, and $2 + 6$, each equal to 8.

Worked example

Problem. State the expanded result and explain what happens to the four distinct terms. Use the complete expanded and simplified polynomial as the matching response, retaining the original distribution order and sign requirements.

Expression	$0(7x^6 - 3x^2y + 5y^4 - 11)$
------------	-------------------------------

Answer. 0.

Explanation and check.

Every partial product has factor 0, so all four terms become 0 and their sum is the zero polynomial.