

Algebra 1
Multiplying Monomials

Multiplying Monomials | A1-U08-P03
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
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Topic focus
This topic is a focused set of 96 practice tasks on Multiplying Monomials.
8 PDFs and a README; 79 buyer pages.

Algebra 1

Multiplying Monomials

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.

Resolve the zero exponent and the two coefficient signs before combining powers. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="151 537 797 569"> <tr> <td>Factors</td> <td>$-6m^2n^0p^3, -5mn^4p$</td> </tr> </table> _____ Bank label: _____	Factors	$-6m^2n^0p^3, -5mn^4p$	Determine the sign and simplify the three exponent sums. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="828 510 1471 541"> <tr> <td>Factors</td> <td>$9q^2r^5s, -(\frac{1}{3})q^3rs^2$</td> </tr> </table> _____ Bank label: _____	Factors	$9q^2r^5s, -(\frac{1}{3})q^3rs^2$
Factors	$-6m^2n^0p^3, -5mn^4p$				
Factors	$9q^2r^5s, -(\frac{1}{3})q^3rs^2$				
Use the decimal coefficient exactly and merge the shared variable factors. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="151 871 797 903"> <tr> <td>Factors</td> <td>$-12x^4y, -0.25x^2y^2$</td> </tr> </table> _____ Bank label: _____	Factors	$-12x^4y, -0.25x^2y^2$	Reduce the signed rational coefficient and simplify both powers. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="828 844 1471 875"> <tr> <td>Factors</td> <td>$(\frac{5}{8})a^3b^4, -(\frac{16}{15})ab^2$</td> </tr> </table> _____ Bank label: _____	Factors	$(\frac{5}{8})a^3b^4, -(\frac{16}{15})ab^2$
Factors	$-12x^4y, -0.25x^2y^2$				
Factors	$(\frac{5}{8})a^3b^4, -(\frac{16}{15})ab^2$				
Keep the coefficient in decimal form and combine the variables. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="151 1178 797 1209"> <tr> <td>Factors</td> <td>$0.6c^2d^3, -1.5c^5d$</td> </tr> </table> _____ Bank label: _____	Factors	$0.6c^2d^3, -1.5c^5d$	Combine the repeated bases and retain the new w factor. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="828 1178 1471 1209"> <tr> <td>Factors</td> <td>$7uv^6, -2u^3v^2w^4$</td> </tr> </table> _____ Bank label: _____	Factors	$7uv^6, -2u^3v^2w^4$
Factors	$0.6c^2d^3, -1.5c^5d$				
Factors	$7uv^6, -2u^3v^2w^4$				
Reduce the coefficient before reporting the three-variable product. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="151 1507 797 1539"> <tr> <td>Factors</td> <td>$-10g^2h^3k, (\frac{3}{5})gh^2k^4$</td> </tr> </table> _____ Bank label: _____	Factors	$-10g^2h^3k, (\frac{3}{5})gh^2k^4$	Show the rational reduction and high-power consolidation in the product. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="828 1535 1471 1566"> <tr> <td>Factors</td> <td>$-(\frac{3}{8})x^7y^2, -(\frac{16}{9})x^3y^5$</td> </tr> </table> _____ Bank label: _____	Factors	$-(\frac{3}{8})x^7y^2, -(\frac{16}{9})x^3y^5$
Factors	$-10g^2h^3k, (\frac{3}{5})gh^2k^4$				
Factors	$-(\frac{3}{8})x^7y^2, -(\frac{16}{9})x^3y^5$				

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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.

Decide whether exponent work is needed before giving the product. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Factors</td> <td>$0z^7w^2, -3zw$</td> </tr> </table> 	Factors	$0z^7w^2, -3zw$	Find the product and state why adding the displayed exponents does not give its degree. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Factors</td> <td>$0m^6n, -17m^2n^8$</td> </tr> </table> 	Factors	$0m^6n, -17m^2n^8$								
Factors	$0z^7w^2, -3zw$												
Factors	$0m^6n, -17m^2n^8$												
Compute the exact monomial product and its total degree. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Factors</td> <td>$(\frac{7}{12})s^4t^3, -(\frac{18}{35})s^2t^5u$</td> </tr> </table> 	Factors	$(\frac{7}{12})s^4t^3, -(\frac{18}{35})s^2t^5u$	First simplify the monomial product; then evaluate it at $x = -1$ and $y = 2$. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Factors</td> <td colspan="2">$-3x^4y, 2x^2y^3$</td> </tr> <tr> <td>Evaluation</td> <td colspan="2"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">x</td> <td>-1</td> </tr> <tr> <td>y</td> <td>2</td> </tr> </table> </td> </tr> </table> 	Factors	$-3x^4y, 2x^2y^3$		Evaluation	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">x</td> <td>-1</td> </tr> <tr> <td>y</td> <td>2</td> </tr> </table>		x	-1	y	2
Factors	$(\frac{7}{12})s^4t^3, -(\frac{18}{35})s^2t^5u$												
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x	-1												
y	2												
After applying the given parameter value, decide which part of the four-factor product controls the result. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Factors</td> <td colspan="2">$-5z^2w, cz^3, 7w^5, -z$</td> </tr> <tr> <td>Parameter value</td> <td colspan="2"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">c</td> <td>0</td> </tr> </table> </td> </tr> </table> 	Factors	$-5z^2w, cz^3, 7w^5, -z$		Parameter value	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">c</td> <td>0</td> </tr> </table>		c	0	Simplify the five factors and report the total degree of the resulting monomial. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Factors</td> <td colspan="2">$2x^2y, -3xy^2, (\frac{1}{2})z^3, -4xz, y$</td> </tr> </table> 	Factors	$2x^2y, -3xy^2, (\frac{1}{2})z^3, -4xz, y$		
Factors	$-5z^2w, cz^3, 7w^5, -z$												
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c	0												
Factors	$2x^2y, -3xy^2, (\frac{1}{2})z^3, -4xz, y$												

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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: $-14r^4s^4$. Interpret the unit coefficient and zero power, then simplify the product. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="151 604 795 640"> <tr> <td>Factors</td> <td>$-x^5y^2, 6x^0y^3$</td> </tr> </table> Your response: _____	Factors	$-x^5y^2, 6x^0y^3$	Incoming: $6c^7d^3$. Cancel within the numerical product, then combine the literal factors. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="824 577 1469 619"> <tr> <td>Factors</td> <td>$14k^2l, (\frac{3}{7})kl^4$</td> </tr> </table> Your response: _____	Factors	$14k^2l, (\frac{3}{7})kl^4$
Factors	$-x^5y^2, 6x^0y^3$				
Factors	$14k^2l, (\frac{3}{7})kl^4$				
Incoming: $-15a^3b^5c^4$. Determine the positive product created by the two signed factors. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="151 1008 795 1050"> <tr> <td>Factors</td> <td>$-4mn^3p^2, -2m^4np$</td> </tr> </table> Your response: _____	Factors	$-4mn^3p^2, -2m^4np$	Incoming: $2p^3q^6$. Give the exact product without a decimal coefficient. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="824 1008 1469 1050"> <tr> <td>Factors</td> <td>$-(\frac{2}{3})r^3s^2, 9rs$</td> </tr> </table> Your response: _____	Factors	$-(\frac{2}{3})r^3s^2, 9rs$
Factors	$-4mn^3p^2, -2m^4np$				
Factors	$-(\frac{2}{3})r^3s^2, 9rs$				
START Multiply the two monomials and write one simplified term. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="151 1428 795 1470"> <tr> <td>Factors</td> <td>$3x, 4y$</td> </tr> </table> Your response: _____	Factors	$3x, 4y$	Incoming: $10cd^2$. Multiply and combine each repeated variable base. Use the complete simplified monomial as the matching response and retain the original coefficient, sign and exponent justification. <table border="1" data-bbox="824 1428 1469 1470"> <tr> <td>Factors</td> <td>$4x^2y, 3xy^3$</td> </tr> </table> Your response: _____	Factors	$4x^2y, 3xy^3$
Factors	$3x, 4y$				
Factors	$4x^2y, 3xy^3$				

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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.

Multiply the three factors and collect matching variables. Choose an organization route: multiply the signed coefficients and collect each variable group separately, or multiply the monomial factors successively. Explain why the route is useful for these factors, use it, and preserve every exponent and sign.

Factors	$2x, 3y, 4xy$
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Use the number of negative factors to determine the sign, then simplify. Choose an organization route: multiply the signed coefficients and collect each variable group separately, or multiply the monomial factors successively. Explain why the route is useful for these factors, use it, and preserve every exponent and sign.

Factors	$-a^2, 5ab, -2b^3$
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Group coefficient, m , and n factors before multiplying. Choose an organization route: multiply the signed coefficients and collect each variable group separately, or multiply the monomial factors successively. Explain why the route is useful for these factors, use it, and preserve every exponent and sign.

Factors	$3m^2n, -2mn^3, 5m$
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Simplify and explain why the final sign is negative. Choose an organization route: multiply the signed coefficients and collect each variable group separately, or multiply the monomial factors successively. Explain why the route is useful for these factors, use it, and preserve every exponent and sign.

Factors	$-4p, -q^2, -3pq$
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Multiplying Monomials

Full Worked Solutions - excerpt

Worked example

Problem. Decide whether exponent work is needed before giving the product.

Factors	$0z^7w^2, -3zw$
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Answer. The product is zero.

Explanation and check.

A coefficient of zero makes the first factor zero. The zero-product property settles the result before any exponents are combined.

Worked example

Problem. Write the signed product as a single monomial.

Factors	$7pq, -q$
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Answer. $-7pq^2$.

Explanation and check.

The coefficient becomes -7 . The two q factors combine to q^2 , while p appears once.