Sets & Steps
Math Practice & Worked Solutions

Algebra 1

Negative Exponents

Negative Exponents | A1-U07-P05

96 problems · Four activity formats

Topic focus

Across 96 tasks this topic asks for exact positive-exponent form, integer exponent, ordering, or domain-aware correction.

8 PDFs and a README; 52 buyer pages.

The following pages use the same questions, given data, and notation as the final files. Question/card serial numbers and internal IDs are omitted in this preview only. Table values and matching responses are retained. Full answer keys are not included.

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Algebra 1

Negative Exponents

Name: _____ **Date:** _____ **Class:** _____

Answer each question and record the matching bank letter. Give exact values. Give the whole requested response, including any reasoning the question asks for.

Rewrite $(-3)^{-2}$ using a positive exponent, then give its exact value. Invert the complete base rather than changing its sign. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____	Rewrite x^{-2} using only positive exponents and state the original real-domain condition. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____
Rewrite y^{-5} using only positive exponents and state the original real-domain condition. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____	Rewrite $(-m)^{-3}$ using only positive exponents and state the original real-domain condition. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____
Rewrite $(2a)^{-2}$ using only positive exponents and state the original real-domain condition. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____	Rewrite $(-3b)^{-3}$ using only positive exponents and state the original real-domain condition. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____
Rewrite $(uv)^{-2}$ using only positive exponents and state the original real-domain condition. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____	Rewrite $(-rs)^{-3}$ using only positive exponents and state the original real-domain condition. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption. Bank label: _____

Algebra 1

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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. Give the whole requested response, including any reasoning the question asks for.

Rewrite $(x-4)^{-2}$ using only positive exponents and state the original real-domain condition.	Rewrite $(t+7)^{-3}$ using only positive exponents and state the original real-domain condition.
Rewrite $(2p-5)^{-1}$ using only positive exponents and state the original real-domain condition.	Rewrite $(3q+1)^{-4}$ using only positive exponents and state the original real-domain condition.
Rewrite $((k+2)(k-1))^{-2}$ using only positive exponents and state the original real-domain condition.	Rewrite $(z^2+1)^{-3}$ using only positive exponents and state the original real-domain condition.

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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: $\frac{1}{4^2} = \frac{1}{16}$

Rewrite 5^{-3} using a positive exponent, then give its exact value. Invert the complete base rather than changing its sign. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption.

Your response: _____

START

Rewrite 2^{-1} using a positive exponent, then give its exact value. Invert the complete base rather than changing its sign. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption.

Your response: _____

Incoming: $(\frac{7}{4})^2 = \frac{49}{16}$

Rewrite $(\frac{5}{2})^{-2}$ with a positive exponent and evaluate exactly. Preserve the sign as part of the reciprocal base. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption.

Your response: _____

Incoming: $\frac{1}{10^1} = \frac{1}{10}$

Rewrite 10^{-3} using a positive exponent, then give its exact value. Invert the complete base rather than changing its sign. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption.

Your response: _____

Incoming: $\frac{1}{6^2} = \frac{1}{36}$

Rewrite 10^{-1} using a positive exponent, then give its exact value. Invert the complete base rather than changing its sign. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption.

Your response: _____

Incoming: $(\frac{4}{3})^2 = \frac{16}{9}$

Rewrite $(\frac{3}{5})^{-3}$ with a positive exponent and evaluate exactly. Preserve the sign as part of the reciprocal base. Use the requested exact positive-exponent expression/value as the matching response, complete the original explanation, and retain every stated nonzero assumption.

Your response: _____

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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.

Assume x and y are nonzero. Rewrite $x^{-2}y^{3}$ using only positive exponents. Explain which factor crosses the fraction bar. Choose a route: replace each negative-powered factor by its reciprocal before combining, or first combine signed exponents of identical bases and then rewrite the result with positive exponents. Explain why your chosen route fits this expression, use it, and retain all original nonzero assumptions.

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Full Worked Solutions - excerpt

Worked example

Problem. Compare 3^{-4} and 3^{-2} using <, =, or > without relying on decimal approximations. Explain the reciprocal order or negative-base parity that decides the result.

Answer. $3^{-4} < 3^{-2}$

Explanation and check.

Because $3^4 > 3^2 > 0$, their reciprocals satisfy $3^{-4} < 3^{-2}$.

Worked example

Problem. A student rewrites $(2x)^{-2}$ as $\frac{1}{2x^2}$. Identify the first structural error, then give the corrected expression and every original-domain restriction.

Answer. $(2x)^{-2} = \frac{1}{4x^2}$, with $x \neq 0$.

Explanation and check.

The exponent applies to the entire product, so both 2 and x must be squared after inversion.