

Algebra 1
Scientific Notation Conversions

Scientific Notation Conversions | A1-U07-P06

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
Across 96 tasks this topic asks for exact decimal, normalized scientific notation, missing entry, or corrected conversion.
8 PDFs and a README; 50 buyer pages.

Algebra 1

Scientific Notation Conversions

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.

Write -9200000 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____	Write -0.6 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____
Write -0.045 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____	Write -0.00307 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____
Write -0.00082 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____	Write -0.09006 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____
Write -120300 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____	Write -0.0007004 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. _____ Bank label: _____

Algebra 1

Scientific Notation Conversions

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

Convert the exact decimal 0 to normalized scientific notation, or explain why the usual nonzero-coefficient form does not apply. Do not round or discard internal zeros. 	Convert the exact decimal 0.0000 to normalized scientific notation, or explain why the usual nonzero-coefficient form does not apply. Do not round or discard internal zeros.
Expand $3.5 \cdot 10^4$ as an exact ordinary decimal. Treat the coefficient sign and exponent sign independently, and do not round. 	Expand $4.7 \cdot 10^5$ as an exact ordinary decimal. Treat the coefficient sign and exponent sign independently, and do not round.
Expand $2.34 \cdot 10^3$ as an exact ordinary decimal. Treat the coefficient sign and exponent sign independently, and do not round. 	Complete or analyze the equality $48000 = 4.8 \cdot 10^n$. Recover n exactly and distinguish value equality from the normalization requirement.

Algebra 1

Scientific Notation Conversions

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.

START Write 35000 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. Your response: _____	Incoming: $6.5 \cdot 10^{-6}$ Write 0.00203 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. Your response: _____
Incoming: $5.6 \cdot 10^{-2}$ Write 0.000078 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. Your response: _____	Incoming: $7.8 \cdot 10^{-5}$ Write 0.0000065 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. Your response: _____
Incoming: $4.567 \cdot 10^5$ Write 32100000 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. Your response: _____	Incoming: $6.25 \cdot 10^6$ Write 75000000 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Use the original requested normalized scientific form or exact ordinary decimal as the matching response, and complete the original explanation. Keep all digits and signs. Your response: _____

Algebra 1**Scientific Notation Conversions****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.

Write 1200 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Choose a conversion method: track the decimal point from its original position to a coefficient of magnitude at least 1 and less than 10, or track successive multiplication/division by 10 until that coefficient range is reached. Explain your choice and use it without rounding; if the value is zero, explain why the stipulated normalized form is unavailable.

Write 50700 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Choose a conversion method: track the decimal point from its original position to a coefficient of magnitude at least 1 and less than 10, or track successive multiplication/division by 10 until that coefficient range is reached. Explain your choice and use it without rounding; if the value is zero, explain why the stipulated normalized form is unavailable.

Write 9008000 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Choose a conversion method: track the decimal point from its original position to a coefficient of magnitude at least 1 and less than 10, or track successive multiplication/division by 10 until that coefficient range is reached. Explain your choice and use it without rounding; if the value is zero, explain why the stipulated normalized form is unavailable.

Write 0.00012 in normalized scientific notation. Preserve the sign and every nonzero digit; do not round. Choose a conversion method: track the decimal point from its original position to a coefficient of magnitude at least 1 and less than 10, or track successive multiplication/division by 10 until that coefficient range is reached. Explain your choice and use it without rounding; if the value is zero, explain why the stipulated normalized form is unavailable.

Scientific Notation Conversions

Full Worked Solutions - excerpt

Worked example

Problem. A student writes $4500 = 4.5 \cdot 10^2$. Decide whether the value, the normalization, or both are wrong. Give a corrected exact statement and justify the decimal/exponent compensation.

Answer. $4500 = 4.5 \cdot 10^3$.

Explanation and check.

Moving from 4.5 to 4500 is a three-place, not two-place, increase.

Worked example

Problem. A student writes $0.0062 = 6.2 \cdot 10^3$. Decide whether the value, the normalization, or both are wrong. Give a corrected exact statement and justify the decimal/exponent compensation.

Answer. $0.0062 = 6.2 \cdot 10^{-3}$.

Explanation and check.

A small decimal needs a negative exponent; 10^{-3} scales 6.2 down three places.