

Do not write on this test...use the answer sheet!

MCC8.EE.1 Know and apply properties of integer exponents to generate equivalent numerical expressions.

- MCC8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.**

10. Which of the following is not in scientific notation?
- a. 1.1987×10^3 b. 4.56×10^{18} c. 8.642×10^{-3} d. 61.2×10^4

11. Susan was given the following number to convert to scientific notation: 12,050,000
Her answer was 1.25×10^7 , but it was marked wrong on her paper. Why?
- She used a positive exponent when she should have used a negative exponent.
 - She left out a zero in between the two and the five.
 - She was not supposed to have a number in front of the decimal point.
 - She should have used a four as her exponent because there are four zeros on the end of the number.

Rewrite these numbers in standard form.

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|-----------------------------|-----------------|----------------|-----------|------------|
| 12. 6.15×10^2 | a. 615 | b. .0615 | c. 61,500 | d. 600 |
| 13. 7.1532×10^{-5} | a. 0.0000071532 | b. 0.000071532 | c. 71,532 | d. 715,320 |
| 14. 3.456×10^0 | a. 34.56 | b. 0.3456 | c. 3.456 | d. 3.400 |

Rewrite these numbers in scientific notation

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|-----------------------------|----------------------------|----------------------------|--------------------------|--------------------------|
| 15. 0.0372×10^{-7} | a. 3.72×10^{-7} | b. 3.72×10^{-5} | c. 3.72×10^{-9} | d. 3.72×10^{-8} |
| 16. 0.0032 | a. 3.2×10^{-3} | b. 0.32×10^3 | c. 3.2×10^3 | d. 3.2×10^{-4} |
| 17. 54.8×10^3 | a. 54.8×10^4 | b. 5.48×10^{-3} | c. 54,800 | d. 5.48×10^4 |
| 18. 546.43 | a. 5.4643×10^{-2} | b. 5.4643×10^{-2} | c. 5.4643×10^2 | d. 5.46×10^2 |

MCC8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.

Evaluate the expression. Write the result in scientific notation.

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|---|-----------------------|----------------------|---------------------|-------------------------|
| 19. $1.2 \times 10^{-4} \cdot 3 \times 10^6$ | a. 1.5×10^3 | b. 3.6×10^2 | c. 36×10^2 | d. 3.6×10^{10} |
| 20. $\frac{4 \times 10^{-2}}{2 \times 10^{-3}}$ | a. 2×10^{-5} | b. 2×10^5 | c. 2×10^1 | d. 2×10^{-1} |

21. A rectangular section of land made up of wheat farms has a length of 5×10^4 and a width of 6×10^3 meters. What is the area of the land in square meters?

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|----------------------------------|----------------------------------|----------------------------------|-------------------------------------|
| a. 3×10^6 square meters | b. 3×10^7 square meters | c. 3×10^8 square meters | d. 3×10^{12} square meters |
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22. A microscope is set so it makes an object appear 4×10^2 times larger than its actual size. A virus has a diameter of 2×10^{-7} meter. How large will the diameter of the virus appear when it is viewed under the microscope?

- a. 8×10^{-14} meter b. 8×10^{-5} meter c. 8×10^{-4} meter d. 8×10^5 meters

23. Find the quotient.

$$\frac{2.89 \times 10^2}{3.4 \times 10^{-2}} =$$

- a. 0.85×10^0 b. 0.85×10^4 c. 8.5×10^3 d. 8.5×10^5