

NAME \_\_\_\_\_

DATE \_\_\_\_\_

**Module 11** Simplifying Algebraic Expressions  
with Polynomials  
**Lesson 2** Using Scientific Notation



**additional  
practice**

**Write in scientific notation.**

- |  |   |
|--|---|
| 1. 243,000,000 _____   | 2. 0.00024 _____  |
| 3. 0.0014 _____  | 4. 36,000 _____   |
| 5. The daily newspaper circulation in Japan is<br>about 53,200,000 or _____<br>newspapers. | 6. The area of an organism being studied in a lab<br>is 0.00000043 or _____ square<br>meters. |

**Write in standard notation.**

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|--|--|
| 7. $8.7 \times 10^9$ _____   | 8. $5.6 \times 10^2$ _____   |
| 9. $2.1 \times 10^{-5}$ _____  | 10. $3.7 \times 10^0$ _____  |
| 11. There are more than $5.7 \times 10^5$ or<br>_____ people living in<br>Washington, D.C. | 12. The width of a paramecium is<br>approximately $1.05 \times 10^{-4}$ or<br>_____ m. |

**Multiply or divide as indicated. Write answers in scientific notation and round to two decimal places.**

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|---|---|
| 13. $(4 \times 10^3)(6 \times 10^8)$<br>_____   | 14. $(1.6 \times 10^5)(2.1 \times 10^{-3})$<br>_____  |
| 15. $\frac{2 \times 10^{-5}}{4 \times 10^{-1}}$<br>_____  | 16. $\frac{6.4 \times 10^7}{1.6 \times 10^9}$<br>_____  |
| 17. The mass of a proton is $1.67 \times 10^{-27}$ kg. The<br>mass of an electron is $9.11 \times 10^{-31}$ kg. How<br>many times greater is the mass of a proton?<br>_____ | 18. X-rays have a wavelength of $10^{-10}$ m. Radio<br>waves have a wavelength $10^{14}$ times this<br>length. What is the length of a radio wave?<br>_____ |

19. The diameter of Earth is  $1.27 \times 10^4$  km. Saturn has a diameter 9.44 times that of Earth. What is the diameter of Saturn?
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20. The distance from Earth to the sun is  $1.5 \times 10^8$  km. The distance from Neptune to the sun is  $5.916 \times 10^9$  km. How many times further is it from Neptune to the sun?
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21. The mass of Earth is  $5.98 \times 10^{27}$  g. The mass of Pluto is  $2 \times 10^{-3}$  times that of Earth. What is the mass of Pluto?
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22. Light travels about  $9.5 \times 10^{12}$  km in one year. The closest star to Earth except for the sun is Proxima Centauri which is about 4.2 light years away. How many kilometers is it from Earth to Proxima Centauri?
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23. The mass of a neutron is  $1.67 \times 10^{-27}$  kg. There are eight neutrons in a molecule of oxygen. What is the total mass of the neutrons in a molecule of oxygen?
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24. There were about  $9.08 \times 10^5$  new homes sold in 2001. This is 1.7 times more than in 1990. How many new homes were sold in 1990?
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