




8.4 EXERCISES

HOMWORK KEY

-  = **WORKED-OUT SOLUTIONS**
on p. WS1 for Exs. 3, 17, and 53
-  = **TAKS PRACTICE AND REASONING**
Exs. 15, 48, 49, 54, 59, 61, and 62
-  = **MULTIPLE REPRESENTATIONS**
Ex. 58

SKILL PRACTICE

1. **VOCABULARY** Is 0.5×10^6 written in scientific notation? *Explain* why or why not.
2. **WRITING** Is 7.89×10^6 between 0 and 1 or greater than 1? *Explain* how you know.

EXAMPLE 1

on p. 512
for Exs. 3–15

WRITING IN SCIENTIFIC NOTATION Write the number in scientific notation.

- | | | |
|----------------|-------------------------|-------------------|
| 3. 8.5 | 4. 0.72 | 5. 82.4 |
| 6. 0.005 | 7. 72,000,000 | 8. 0.00406 |
| 9. 1,065,250 | 10. 0.000045 | 11. 1,060,000,000 |
| 12. 0.00000526 | 13. 900,000,000,000,000 | 14. 0.00000007008 |

15.  **TAKS REASONING** Which number represents 54,004,000,000 written in scientific notation?

- | | |
|-----------------------------|------------------------------|
| (A) 54004×10^6 | (B) 54.004×10^9 |
| (C) 5.4004×10^{10} | (D) 0.54004×10^{11} |

EXAMPLE 2

on p. 512
for Exs. 16–28

WRITING IN STANDARD FORM Write the number in standard form.

- | | | |
|---------------------------|------------------------------|-----------------------------|
| 16. 2.6×10^3 | 17. 7.5×10^7 | 18. 1.11×10^2 |
| 19. 3.03×10^4 | 20. 4.709×10^6 | 21. 1.544×10^{10} |
| 22. 6.1×10^{-3} | 23. 4.4×10^{-10} | 24. 2.23×10^{-6} |
| 25. 8.52×10^{-8} | 26. 6.4111×10^{-10} | 27. 1.2034×10^{-6} |

28. **ERROR ANALYSIS** Describe and correct the error in writing 1.24×10^{-3} in standard form.

$$1.24 \times 10^{-3} = 1240$$



EXAMPLE 3

on p. 513
for Exs. 29–32

ORDERING NUMBERS Order the numbers from least to greatest.

29. 45,000; 6.7×10^3 ; 12,439; 2×10^4
30. 65,000,000; 6.2×10^6 ; 3.557×10^7 ; 55,004,000; 6.07×10^6
31. 0.0005; 9.8×10^{-6} ; 5×10^{-3} ; 0.00008; 0.04065 ; 8.2×10^{-3}
32. 0.0000395; 0.00010068; 2.4×10^{-5} ; 5.08×10^{-6} ; 0.000005

COMPARING NUMBERS Copy and complete the statement using $<$, $>$, or $=$.

- | | |
|---|--|
| 33. 5.6×10^3 <u>?</u> 56,000 | 34. 404,000.1 <u>?</u> 4.04001×10^5 |
| 35. 9.86×10^{-3} <u>?</u> 0.00986 | 36. 0.003309 <u>?</u> 3.309×10^{-3} |
| 37. 2.203×10^{-4} <u>?</u> 0.0000203 | 38. 604,589,000 <u>?</u> 6.04589×10^7 |