

2.5 Exercises

Vocabulary and Concept Check

- NUMBER SENSE** If you know $12 \times 24 = 288$, how can you find 1.2×2.4 ?
- NUMBER SENSE** Is the product 1.23×8 greater than or less than 8? Explain.

Copy the problem and place the decimal point in the product.

$$\begin{array}{r} 3. \quad 1.78 \\ \times 4.9 \\ \hline 8722 \end{array}$$

$$\begin{array}{r} 4. \quad 9.24 \\ \times 0.68 \\ \hline 62832 \end{array}$$

$$\begin{array}{r} 5. \quad 3.75 \\ \times 5.22 \\ \hline 195750 \end{array}$$

How many decimal places are in the product?

$$6. \quad 6.17 \times 8.2$$

$$7. \quad 1.684 \times 10.2$$

$$8. \quad 0.053 \times 2.78$$

Practice and Problem Solving

Use base ten blocks or an area model to find the product.

$$9. \quad \begin{array}{r} 2.1 \\ \times 1.5 \\ \hline \end{array}$$

$$10. \quad \begin{array}{r} 0.6 \\ \times 0.4 \\ \hline \end{array}$$

$$11. \quad \begin{array}{r} 0.7 \\ \times 0.3 \\ \hline \end{array}$$

$$12. \quad \begin{array}{r} 2.7 \\ \times 2.3 \\ \hline \end{array}$$

Multiply. Use estimation to check your answer.

1 2 $13. \quad \begin{array}{r} 4.8 \\ \times 7 \\ \hline \end{array}$

$$14. \quad \begin{array}{r} 6.3 \\ \times 5 \\ \hline \end{array}$$

$$15. \quad \begin{array}{r} 7.19 \\ \times 16 \\ \hline \end{array}$$

$$16. \quad \begin{array}{r} 0.87 \\ \times 21 \\ \hline \end{array}$$

$$17. \quad \begin{array}{r} 1.95 \\ \times 11 \\ \hline \end{array}$$

$$18. \quad \begin{array}{r} 5.89 \\ \times 5 \\ \hline \end{array}$$

$$19. \quad \begin{array}{r} 3.472 \\ \times 4 \\ \hline \end{array}$$

$$20. \quad \begin{array}{r} 8.188 \\ \times 12 \\ \hline \end{array}$$

$$21. \quad 100 \times 0.024$$

$$22. \quad 19 \times 0.004$$

$$23. \quad 0.0038 \times 9$$

$$24. \quad 10 \times 0.0093$$



ERROR ANALYSIS Describe and correct the error in the solution.

25. 
$$\begin{array}{r} 0.0045 \\ \times 9 \\ \hline 4.05 \end{array}$$

26. 
$$\begin{array}{r} 0.32 \\ \times 5 \\ \hline 0.160 \end{array}$$

- MOON** The weight of an object on the Moon is about 0.167 of its weight on Earth. How much does a 180-pound astronaut weigh on the Moon?
- BAMBOO** A bamboo plant grows about 1.25 feet each day. Find the growth in one week.
- NAILS** A fingernail grows about 0.1 millimeter each day. How much does a fingernail grow in 30 days? 90 days?

Multiply.

30. 0.7×0.2 31. 0.08×0.3 32. 0.007×0.03 33. 0.0008×0.09
34. 0.004×0.9 35. 0.06×0.5 36. 0.0008×0.004 37. 0.0002×0.06
38. 12.4×0.2 39. 18.6×5.9 40. 7.91×0.72 41. 1.16×3.35
42. 6.478×18.21 43. 1.9×7.216 44. 0.0021×18.2 45. 6.109×8.4

46. **ERROR ANALYSIS** Describe and correct the error in the solution.

$$\begin{array}{r} 4.9 \\ \times 3.8 \\ \hline 186.2 \end{array}$$

47. **TAKEOUT** A Chinese restaurant offers buffet takeout for \$4.99 per pound. How much does your takeout meal cost?
48. **CROPLAND** Alabama has about 2.51 million acres of cropland. Florida has about 1.15 times as much cropland as Alabama. How much cropland does Florida have?
49. **GOLD** On a tour of an old gold mine, you find a nugget containing 0.82 ounce of gold. Gold is worth \$1566.80 per ounce. How much is your nugget worth?
50. **BUILDING HEIGHTS** One meter is approximately 3.28 feet. Find the height of each building in feet by multiplying its height in meters by 3.28.



Continent	Tallest Building	Height (meters)
Africa	Carlton Centre Office Tower	223
Asia	Burj Khalifa	828
Australia	Q1 Tower	323
Europe	The Shard	310
North America	Willis Tower	442
South America	Gran Torre	300

51. **REASONING** Show how to evaluate $7.12 \times 8.22 \times 100$ without multiplying the two decimals.

ORDER OF OPERATIONS Evaluate the expression.

- 4 52. $2.4 \times 16 + 7$ 53. $6.85 \times 2 \times 10$ 54. $1.047 \times 5 - 0.88$
55. $4.32(3.7 + 1.65)$ 56. $23.98 - 1.7^2 \cdot 7.6$ 57. $12 \cdot 5.16 + 10.064$
58. $0.9(8.2 \cdot 20.35)$ 59. $7.5^2(6.084 - 5.44)$ 60. $6.8 \cdot 2.18 \cdot 3.95$
61. **REASONING** Without multiplying, how many decimal places does 3.4^2 have? 3.4^3 ? 3.4^4 ? Explain your reasoning.