

# Multiplying and Dividing Decimals

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 18

## Quick Review and Helpful Hints

To *multiply* decimals, ignore the points and multiply like whole numbers, then place the decimal point so the answer has as many decimal places as the two factors combined. To *divide*, shift the divisor's point to make it a whole number, shift the dividend's point the same number of places, and divide.

▶ **Example:** Multiply  $0.6 \times 0.4$ . **Work:** Ignore the points:  $6 \times 4 = 24$ . The factors have  $1 + 1 = 2$  decimal places, so place the point two spots in. ★ **Answer:** 0.24

$$\begin{array}{r}
 0.6 \times 0.4 \\
 \downarrow \\
 6 \times 4 = 24 \\
 \Rightarrow 0.24 \\
 \\
 1 + 1 = 2 \text{ decimal places.}
 \end{array}$$

### ◆ Practice Problems

Multiply or divide.

- |                     |       |                       |       |
|---------------------|-------|-----------------------|-------|
| 1. $0.2 \times 0.3$ | _____ | 8. $4.8 \div 0.4$     | _____ |
| 2. $0.5 \times 0.4$ | _____ | 9. $0.25 \times 4$    | _____ |
| 3. $1.2 \times 0.3$ | _____ | 10. $1.5 \times 1.5$  | _____ |
| 4. $0.7 \times 6$   | _____ | 11. $0.08 \times 5$   | _____ |
| 5. $2.5 \times 0.4$ | _____ | 12. $7.2 \div 0.9$    | _____ |
| 6. $0.9 \times 0.9$ | _____ | 13. $0.6 \times 0.05$ | _____ |
| 7. $3.6 \div 0.6$   | _____ | 14. $9.6 \div 0.8$    | _____ |

### ◆ Word Problems

15. Three notebooks cost \$2.50 each. What is the total cost? \_\_\_\_\_
16. A \$12.60 bill is split equally among 6 people. How much does each pay? \_\_\_\_\_
17. Apples cost \$4.40 per pound. What is the cost of 0.5 pound? \_\_\_\_\_
18. A track lap is 0.7 mile. How many laps make 8.4 miles? \_\_\_\_\_



## Answer Keys

- |         |          |             |
|---------|----------|-------------|
| 1. 0.06 | 7. 6     | 13. 0.03    |
| 2. 0.2  | 8. 12    | 14. 12      |
| 3. 0.36 | 9. 1     | 15. \$7.50  |
| 4. 4.2  | 10. 2.25 | 16. \$2.10  |
| 5. 1    | 11. 0.4  | 17. \$2.20  |
| 6. 0.81 | 12. 8    | 18. 12 laps |

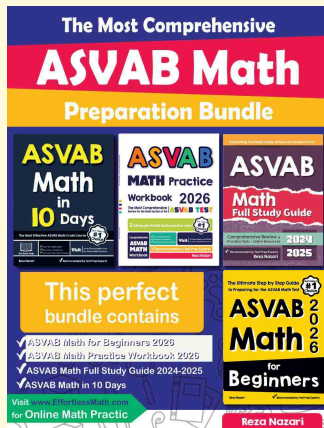
### Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Ignore the points and multiply:  $2 \times 3 = 6$ . The factors have  $1 + 1 = 2$  decimal places, so place the point two spots in: 0.06. So the final answer is 0.06.
2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $5 \times 4 = 20$ , with 2 decimal places: 0.20, which is 0.2. So the final answer is 0.2.
3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $12 \times 3 = 36$ , with 2 decimal places: 0.36. So the final answer is 0.36.
4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $7 \times 6 = 42$ , with 1 decimal place: 4.2. So the final answer is 4.2.
5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $25 \times 4 = 100$ , with 2 decimal places: 1.00, which is 1. So the final answer is 1.
6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $9 \times 9 = 81$ , with 2 decimal places: 0.81. So the final answer is 0.81.
7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Make the divisor whole by moving both points one place:  $36 \div 6 = 6$ . So the final answer is 6.
8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Move both points one place:  $48 \div 4 = 12$ . So the final answer is 12.
9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $25 \times 4 = 100$ , with 2 decimal places: 1.00 = 1. So the final answer is 1.
10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $15 \times 15 = 225$ , with 2 decimal places: 2.25. So the final answer is 2.25.
11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $8 \times 5 = 40$ , with 2 decimal places: 0.40 = 0.4. So the final answer is 0.4.
12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Move both points one place:  $72 \div 9 = 8$ . So the final answer is 8.
13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $6 \times 5 = 30$ , with  $1 + 2 = 3$  decimal places: 0.030 = 0.03. So the final answer is 0.03.
14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Move both points one place:  $96 \div 8 = 12$ . So the final answer is 12.
15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Multiply the price by the quantity:  $2.50 \times 3 = \$7.50$ . So the final answer is \$7.50.
16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Divide the bill among the people:  $12.60 \div 6 = \$2.10$  each. So the final answer is \$2.10.
17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Multiply the cost per pound by the weight:  $4.40 \times 0.5 = \$2.20$ . So the final answer is \$2.20.
18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Divide the distance by the lap length:  $8.4 \div 0.7$ ; moving both points gives  $84 \div 7 = 12$  laps. So the final answer is 12 laps.



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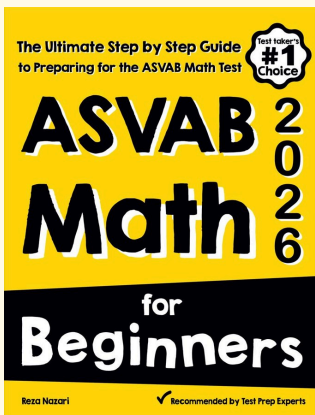
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