

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 0.6×0.4 . **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. 0.2×0.3 | _____ | 8. $4.8 \div 0.4$ | _____ |
| 2. 0.5×0.4 | _____ | 9. 0.25×4 | _____ |
| 3. 1.2×0.3 | _____ | 10. 1.5×1.5 | _____ |
| 4. 0.7×6 | _____ | 11. 0.08×5 | _____ |
| 5. 2.5×0.4 | _____ | 12. $7.2 \div 0.9$ | _____ |
| 6. 0.9×0.9 | _____ | 13. 0.6×0.05 | _____ |
| 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. <input type="text" value="0.06"/> | 7. <input type="text" value="6"/> | 13. <input type="text" value="0.03"/> |
| 2. <input type="text" value="0.2"/> | 8. <input type="text" value="12"/> | 14. <input type="text" value="12"/> |
| 3. <input type="text" value="0.36"/> | 9. <input type="text" value="1"/> | 15. <input type="text" value="\$7.50"/> |
| 4. <input type="text" value="4.2"/> | 10. <input type="text" value="2.25"/> | 16. <input type="text" value="\$2.10"/> |
| 5. <input type="text" value="1"/> | 11. <input type="text" value="0.4"/> | 17. <input type="text" value="\$2.20"/> |
| 6. <input type="text" value="0.81"/> | 12. <input type="text" value="8"/> | 18. <input type="text" value="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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