Worksheet: Operations on Decimals (Addition and Subtraction) : Difficulty Level : Advance

Instructions: Solve the following problems involving operations on decimals. Show your work for each question.

Part 1: Addition and Subtraction of Decimals

1. **Add the following decimals:**
    - (a) 12.456 + 8.732 = _____
    - (b) 45.007 + 19.398 = _____
    - (c) 9.123 + 0.987 = _____
    - (d) 123.456 + 789.123 = _____
2. **Subtract the following decimals:**
    - (a) 89.654 - 23.876 = _____
    - (b) 456.789 - 123.456 = _____
    - (c) 15.987 - 9.123 = _____
    - (d) 100.5 - 99.999 = _____

Part 2: Multiplication of Decimals

3. **Multiply the following decimals:**
    - (a) 6.23 × 4.5 = _____
    - (b) 12.345 × 0.06 = _____
    - (c) 0.789 × 2.34 = _____
    - (d) 45.678 × 0.1 = _____
4. **Word Problem:**
    A piece of cloth costs $12.345 per meter. If Jessica buys 4.6 meters, how much does she spend in total?
    Answer: _____

Part 3: Division of Decimals

5. **Divide the following decimals:**
    - (a) 45.678 ÷ 2.1 = _____
    - (b) 123.456 ÷ 0.4 = _____
    - (c) 56.789 ÷ 3.2 = _____
    - (d) 0.567 ÷ 0.09 = _____
6. **Word Problem:**
    A packet of nuts weighs 9.876 kg. If it is divided equally into 4.2 smaller packets, what is the weight of each smaller packet?
    Answer: _____

Part 4: Mixed Operations on Decimals

7. **Solve the following mixed operations:**
    - (a) (5.123 + 3.876) × 2.4 = _____
    - (b) 15.789 − (4.567 + 1.234) = _____
    - (c) 23.456 ÷ (1.2 × 0.5) = _____
    - (d) (7.890 + 12.345) ÷ 3.4 = _____
8. **Word Problem:**
    A recipe requires 0.678 liters of milk. If a chef prepares 5.5 times the recipe amount, how much milk will be needed?
    Answer: _____

Part 5: Challenge Problems

9. **Advanced Word Problem:**
    If a runner completes a lap in 8.345 seconds and runs 15.75 laps in total, what is the total time taken?
    Answer: _____
10. **Challenge Question:**
    Divide 123.456 by 1.23 and then subtract 15.6 from the result.
    Answer: _____
11. **Complex Calculation:**
    (25.678 × 1.9) + (34.567 ÷ 2.1) − 12.345 = _____

Part 6: Real-World Application

12. **Word Problem:**
    A store sells juice in 0.5-liter bottles. If a customer buys 12.75 liters of juice, how many bottles did they purchase?
    Answer: _____

13. **Practical Problem:**
    A ribbon is 15.678 meters long. A piece of 2.345 meters is cut off. How much ribbon is left, and if the remaining ribbon is divided into 3 equal parts, what is the length of each part?
    Answer: _____

Part 7: Bonus Challenge

14. **Bonus Problem:**
    A machine processes 0.034 kg of material per second. How much material is processed in 150.25 seconds?
    Answer: _____

15. **Challenge Puzzle:**
    Multiply 4.567 by 3.456 and then divide the result by 2.34.
    Answer: _____

This worksheet includes **advanced-level problems** involving all operations on decimals, as well as real-world application questions to challenge students' understanding and problem-solving skills.

—BE CHAMPION—