🥣 Recipe Math & Scaling Quest

Name: _____ Grade: 4 Date: _____

Double, halve, and scale ingredients. Mix fraction thinking with real kitchen choices. Show work for multi-step items.

Part 1 · Quick Doubling DOUBLE

1. Double 3/4 cup sugar = _____ cup(s)

2. Double 1/2 cup oats = _____ cup(s)

3. Double 2/3 cup flour = _____ cup(s)

4. Double 1 1/4 cups milk = _____ cups

5. Double 2 1/2 tsp vanilla = _____ tsp

6. Double 3/8 cup nuts = _____ cup(s)

Part 2 · Quick Halving HALVE

7. Half of 3/4 cup butter = _____ cup(s)

8. Half of 2/3 cup honey = _____ cup(s)

9. Half of 1 1/2 cups pasta = _____ cups

10. Half of 2 1/4 cups juice = _____ cups

11. Half of 5/8 cup raisins = _____ cup(s)

12. Half of 1 3/4 tsp salt = _____ tsp

Tip: Halve whole number part and fraction part—regroup if needed (e.g., 1 3/4 = 1 + 3/4).

Part 3 · Scale to New Servings SCALE

13. Recipe: 2 cups flour for 4 muffins. For 8 muffins: _____ cups

14. Recipe: 3/4 cup cocoa for 6 brownies. For 3 brownies: _____ cup

15. Recipe: 1 1/2 cups rice for 6 bowls. For 2 bowls: _____ cups

16. Recipe: 2/3 cup cheese for 3 wraps. For 9 wraps: _____ cups

17. Recipe: 5 cups punch serves 10 kids. For 6 kids: _____ cups

18. Recipe: 4 1/2 cups soup serves 9. For 3 servings: _____ cups

Part 4 · Multi-Step Menu Math MULTI

19. Smoothie (1 batch): 1 1/4 c berries + 1/2 c yogurt + 3/4 c juice. Make 2 batches. Total cups all ingredients = _____

20. Salad dressing: 2/3 c oil + 1/4 c lemon + 1/2 c water. Double then add 1/8 c herbs. Total cups = _____

21. Trail mix recipe: 3/8 c almonds + 1/2 c raisins + 1/4 c chips. Triple almonds only. New total mix cups = _____

22. Cake icing: Need 5 cups. You have 1 3/4 c + 2 1/8 c made. More needed (cups) = _____

23. Soup: Each bowl uses 3/4 c broth. You have 5 1/4 c broth. Max whole bowls you can serve = _____ (remainder broth?) _____ c

24. Two batches: Batch A 2 2/3 c flour; Batch B 1 3/4 c flour. Combined flour = _____ cups

Part 5 · Unit Adjust & Substitutions ADAPT

25. 4 tablespoons = _____ cups (1 cup=16 Tbsp)

26. 1/2 cup = _____ tablespoons

27. 2 cups = _____ pints (1 pt = 2 c)

28. Recipe needs 3 tsp; you have a 1/2 tsp measure. How many scoops? _____

29. Recipe calls for 1 1/2 c milk; you have only 1 1/4 c. Short by _____ c

30. A spice jar holds 6 tsp. You use 3/8 tsp per batch. Max whole batches from jar = _____

Part 6 · Word Problems & Reasoning THINK

31. A pancake recipe uses 2/3 c batter per pancake. You have 3 1/3 c. How many whole pancakes? _____ (Leftover?) _____ c

32. You mix 1/2 c oats + 3/4 c fruit + 2/3 c yogurt. Replace half the fruit with nuts (same amount). Total stays? (Yes/No) _____

33. A punch has 3 parts juice to 1 part water. Total 8 cups. Cups of juice? _____ Cups of water? _____

34. A granola bar recipe uses 1 1/2 c oats per batch. You need 6 c oats. How many batches? _____

35. Reflection: Which scaling felt easiest? (double / half / custom) _____

36. Explain in ≤6 words why careful measuring matters. _____

Reflections (#35–36) open—accept sensible answers.

Answer Key

1. 1 1/2
2. 1
3. 1 1/3
4. 2 1/2
5. 5
6. 3/4
7. 3/8
8. 1/3
9. 3/4
10. 1 1/8
11. 5/16
12. 7/8
13. 4
14. 3/8
15. 1/2
16. 2
17. 3
18. 1 1/2
19. (1 1/4×2)=2 1/2; (1/2×2)=1; (3/4×2)=1 1/2 ⇒ total 2 1/2+1+1 1/2=5
20. (2/3+1/4+1/2)= (8/12+3/12+6/12)=17/12=1 5/12; doubled=2 10/12=2 5/6; +1/8=2 5/6+1/8= (20/24+3/24)=23/24 ⇒ 23/24
21. Almonds triple: 3/8→9/8. Sum=9/8+1/2+1/4=(9/8+4/8+2/8)=15/8=1 7/8
22. Need 5; have 1 3/4+2 1/8= (7/4+17/8) = (14/8+17/8)=31/8=3 7/8; more = 1 1/8
23. 5 1/4 ÷ 3/4 = (21/4)/(3/4)=7 bowls; remainder 0
24. 2 2/3+1 3/4= (8/3 + 7/4)= (32/12+21/12)=53/12=4 5/12
25. 1/4
26. 8
27. 1
28. 6
29. 1/4
30. 16 (6 ÷ 3/8 = 6 × 8/3=48/3=16)
31. 3 1/3 ÷ 2/3= (10/3)/(2/3)=5 pancakes; leftover 0
32. Yes
33. Juice: 3/4 of 8 = 6; Water: 2
34. 4 (6 ÷ 1 1/2 = 6 ÷ 3/2 = 6 × 2/3 = 4)
35. Varies
36. Varies (e.g., "So recipe works")

Mixed fractions acceptable in simplified or improper form. Equivalent answers OK (e.g., 1.5 for 1 1/2). #23: 7 bowls exactly (no remainder). #21 accept 1.875.