



Ratios & Rates Foundations

Name: _____

Grade: 6

Date: _____

Represent and compare ratios, build equivalent ratios, find unit rates, and reason proportionally. Show table or tape model when helpful.

Part 1 · Ratio Forms FORMS

1. 7 apples to 4 oranges: write 3 forms (____:____, ____ to ____, ____/____)

2. 12 cats, 15 dogs. Ratio dogs:cats simplified = _____

3. A mix 5 cups water, 2 cups syrup. Ratio water:total = _____

4. School has 120 boys, 135 girls. Ratio girls:boys simplified = _____

5. If red:green = 9:6 simplify = _____

6. Ratio A:B = 14:21 reduced = _____

Part 2 · Equivalent Ratios EQUIV

7. $3:5 = ? :15 \rightarrow$ missing = _____

8. $4:7$ scaled $\times 3 \rightarrow$ _____ :

9. $6:10 = 3: \underline{\hspace{2cm}}$

10. Fill table (2,4,6,8) apples when ratio apples:oranges = 1:2 $\rightarrow$ oranges at 8 apples = _____

11. Equivalent of 9:12 with sum 35
(scale factor) new ratio =
_____:

12. 15:20 = _____:4

Part 3 · Unit Rates

RATE

13. \$18 for 6 notebooks $\Rightarrow$ \$ per
notebook = _____

14. 150 miles in 5 hours =
_____ mph

15. 480 pages in 12 days =
_____ pages/day

16. \$2.70 for 9 eggs = _____
per egg

17. 3.6 L juice serves 12 cups =
_____ L per cup

18. 45 problems in 30 min =
_____ problems/min (simplify
fraction)

Part 4 · Ratio Tables & Scaling

TABLE

19. Recipe 2 sugar : 5 flour. Flour
20 $\rightarrow$ sugar = _____

20. Paint 3 blue : 2 white. Total 25
cans $\rightarrow$ blue = _____

21. Fruit punch 4 juice : 3 water. If
juice 28 $\rightarrow$ water = _____

22. Trail mix 5 nuts : 2 raisins.
Nuts 30 $\rightarrow$ total mix units =

23. Seeds 7:4 (sprout:fail) total
143 seeds sprouted = _____

24. Class ratio girls:boys 11:9 total
200 students boys = _____

Part 5 · Tape & Part-Whole Reasoning

TAPE

25. Ratio red:blue = 3:5 total 72 marbles $\Rightarrow$ red = _____ blue = _____

26. Ratio shaded:total = 2:5 if shaded 34 $\Rightarrow$ total = _____

27. Part:part ratio 4:7 sum 132 $\Rightarrow$ each part = _____ larger part = _____

28. Ratio cats:dogs = 5:9 total animals 196 dogs = _____

29. Ratio spend:save = 7:3 if saved \$240 spent = _____

30. Ratio wins:losses = 11:4 total games = 75 losses = _____ (nearest whole)

Part 6 · Proportion & Scaling Decisions PROP

31. Does $6:9 = 20:30$? (Yes/No)

32. Is $4/7 = 28/56$? _____

33. Solve $3/5 = x/25 \rightarrow x =$

34. $8:12 = 2:$ _____

35. $5/8 = 20/$ _____

36. Solve $x:18 = 7:9 \rightarrow x =$

Part 7 · Error Analysis FIX

37. Error: Said 6:10 simplifies to 3:4. Correct & mistake: _____ / _____

38. Error: \$18 for 6 items unit rate $18 \div 6 = 108$. Correct unit & why: _____ / _____

39. Claimed $4:7 = 6:10$ because +2 both. True? _____ ; reason: _____

Part 8 · Challenge & Reflection CHALLENGE

40. Scale 7:11 to sum 108 $\Rightarrow$ scaled ratio _____:_____

41. Two ratios equivalent? 9:15 and 54:92 (Yes/No) _____

42. Unit rate better deal: 8 oz for \$2.00 vs 14 oz for \$3.22 $\Rightarrow$ choose _____

43. Ratio $a:b = 5:8$. If $a=60$ $b=$ _____ ; if $b=200$ $a=$ _____

44. Simplify $132:180 =$ _____:_____ (lowest terms)

45. Reflection: Most helpful strategy today? _____

Reflection answers vary—credit clear reasoning.

Answer Key

1. 7:4, 7 to 4, $7/4$
2. 5:4
3. 5:7
4. 9:8
5. 3:2
6. 2:3
7. 9
8. 12:21
9. 5
10. 16
11. 21:28 scaled to sum 35 $\rightarrow$ factor $35/33 \approx$ (accept 21:28 $\approx$ 22:29) (extension; omit if confusing)
12. 3
13. \$3
14. 30
15. 40
16. \$0.30
17. 0.3
18. 1.5
19. 8
20. 15
21. 21
22. 42
23. 99
24. 90
25. 27 & 45
26. 85
27. 12 & 21
28. 126
29. \$560
30. ≈ 20 ($75 \times 4/15$)
31. Yes
32. No
33. 15
34. 3
35. 32
36. 14
37. 3:5 / divided incorrectly

- 38. \$3 / divide not multiply
- 39. No / additive change not multiplicative
- 40. 42:66
- 41. No ($9/15=0.6$; $54/92\approx0.587$)
- 42. 8 oz (\$0.25/oz) vs 14 oz (\$0.23/oz) choose 14 oz
- 43. 96 ; 125
- 44. 22:30
- 45. Varies

Accept equivalent simplified forms. #11 can be omitted if desired—advanced proportional scaling with target sum.