

Ratio Language and Equivalent Ratios

Grade 6 math · Worksheet · Standards: 6.RP.A.1, 6.RP.A.3a

Name: _____ Date: _____ Class: _____

These 20 problems build ratio fluency step by step: writing $a : b$, a to b and fraction forms, reading tape diagrams, completing ratio tables, and finding equivalent ratios.

The last six problems are word problems that mix ratios with totals and differences. They train standards 6.RP.A.1 and 6.RP.A.3a.

Standards: 6.RP.A.1, 6.RP.A.3a · **Level:** Grade 6

Problem 1 Writing a Ratio (easy)

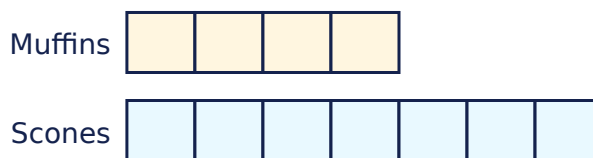
A band room has 14 flutes and 9 clarinets. Write the ratio of flutes to clarinets in three different ways.

Problem 2 Order Matters (easy)

Using the same band room (14 flutes, 9 clarinets), write the ratio of clarinets to flutes. Explain why it is not the same as flutes to clarinets.

Problem 3 Reading a Tape Diagram (easy)

A tape diagram shows the pastries at a school bake sale. Write (a) the ratio of muffins to scones and (b) the ratio of scones to all pastries.



Each block is one pastry.

Problem 4 Part-to-Part and Part-to-Whole (easy)

In a class of 27 students, 12 bike to school and the rest walk. Write the ratio of (a) bikers to walkers, (b) bikers to all students, (c) walkers to all students.

Problem 5 Making Equivalent Ratios (easy)

Write three ratios equivalent to 4 : 7.

Problem 6 Completing a Ratio Table (easy)

A cookie recipe uses flour and sugar in the ratio 3 : 2. Copy and complete the ratio table.

Flour (cups)	3	6	9		30
Sugar (cups)	2			10	

Fill in the four missing values.

Problem 7 Simplest Form (easy)

Write each ratio in simplest form: (a) 36 : 48 (b) 45 : 30.

Problem 8 Equivalent or Not? (medium)

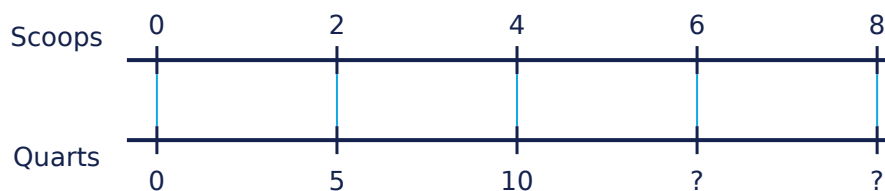
Decide whether each pair of ratios is equivalent. Justify each answer. (a) 5 : 8 and 35 : 56 (b) 9 : 12 and 15 : 21 (c) 16 : 10 and 24 : 15

Problem 9 Finding the Missing Term (medium)

Find the missing number. (a) $7 : 3 = 28 : ?$ (b) $5 : 9 = ? : 63$

Problem 10 Double Number Line (medium)

A sports drink uses 2 scoops of powder for every 5 quarts of water. (a) Copy and complete the double number line. (b) How many quarts of water go with 14 scoops?



Scoops of powder (top) and quarts of water (bottom).

Problem 11 Finding a Whole from a Part (medium)

The ratio of altos to sopranos in a choir is 5 : 6. There are 30 altos. How many sopranos are

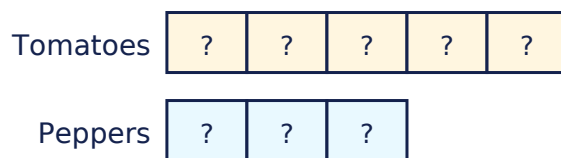
there, and how many singers in all?

Problem 12 Comparing Two Recipes (medium)

Punch A mixes 3 cups of cranberry juice with 5 cups of sparkling water. Punch B mixes 4 cups of cranberry juice with 7 cups of sparkling water. Which punch has the stronger cranberry flavor? Justify with equivalent ratios.

Problem 13 Sharing a Total (medium)

A community garden has 40 plants in the ratio 5 tomato plants to 3 pepper plants, shown in the tape diagram. How many plants of each kind are there?



8 equal blocks hold 40 plants.

Problem 14 Camp Staffing (medium)

A summer camp keeps 2 counselors for every 14 campers. (a) How many counselors are needed for 98 campers? (b) How many campers can 11 counselors supervise?

Problem 15 Mixing Green Paint (hard)

A shade of green uses 4 parts blue to 9 parts yellow. A painter needs 52 quarts of this green in all. How many quarts of each color does the painter need?

Problem 16 Season Record (hard)

A softball team won 9 games and lost 6. Suppose the ratio of wins to losses stays the same over a 45-game season. How many wins and how many losses will the team have?

Problem 17 Pet Store Difference (hard)

At a pet store the ratio of fish to hamsters is 8 : 3. There are 20 more fish than hamsters. How many of each animal are there?

Problem 18 Science Fair Entries (hard)

The ratio of sixth graders to seventh graders at a science fair is 7 : 5. There are 168 students in all. How many more sixth graders than seventh graders are there?

Problem 19 Spot the Error (hard)

Dev says 3 : 5 equals 6 : 8 because he added 3 to each term. Explain his mistake, then find the number that makes $3 : 5 = 6 : ?$.

Problem 20 Fundraiser Revenue (hard)

A school fundraiser sells 3 T-shirts for every 2 hoodies. In one week it sells 135 items in all. A T-shirt costs \$12 and a hoodie costs \$25. How much money does the fundraiser collect?