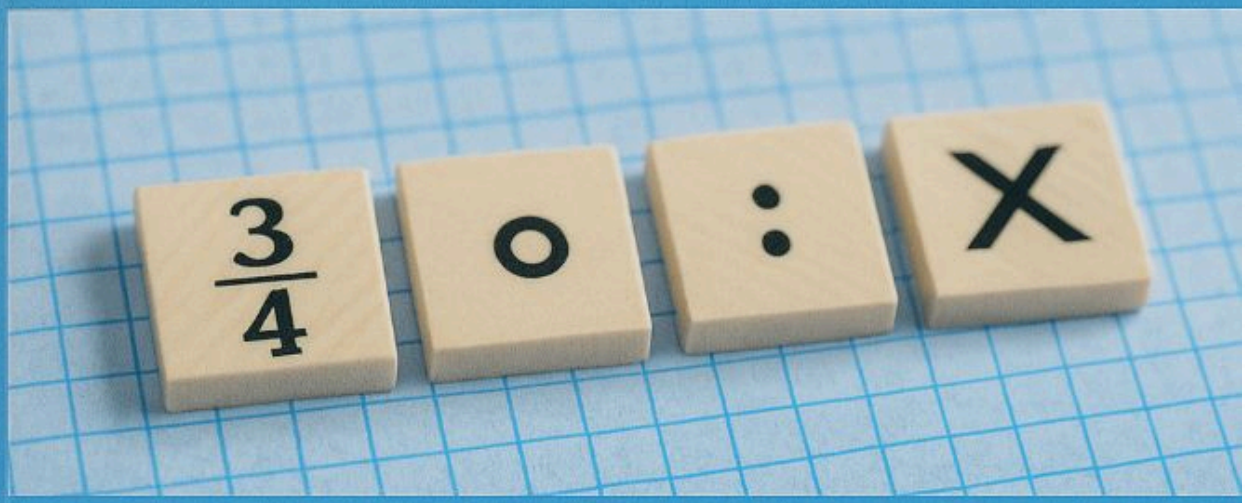

Fractions, Decimals & Ratios

FIX PACK

20 Must-Master Questions
to Patch 80% of Common Errors

How to Use This Pack

- Give your child the Question pages only first (no solutions).
- Let them try it without a calculator in 30–40 minutes.
- Then go through the solutions together, paying attention to the "Watch out" notes – these address the most common mistakes selective kids make.
- You don't need to finish all 20 in one sitting; you can do 5–10 at a time.

SECTION A – FRACTIONS

Q1. Simplify the fraction:

$$\frac{18}{24}$$

Q2. Which is larger, $\frac{3}{5}$ or $\frac{5}{9}$?

Show how you know.

Q3. $\frac{2}{3} + \frac{1}{6} = ?$

Q4. $\frac{7}{8} - \frac{3}{10} = ?$

Give your answer as a simplified fraction.

Q5. Find $\frac{3}{4}$ of 48.

Q6. $2\frac{1}{3} + 1\frac{3}{4} = ?$

Write your answer as a mixed number in simplest form.

Q7. $\frac{5}{6} \div 2 = ?$

Give your answer as a fraction.

Q8. In a class, $\frac{2}{9}$ of the students are absent. There are 28 students present.

How many students are in the class altogether?

SECTION A – FRACTIONS SOLUTIONS

Q1. Simplify $\frac{18}{24}$

Find the highest common factor (HCF) of 18 and 24.

HCF = 6.

$$\frac{18}{24} = \frac{18 \div 6}{24 \div 6} = \frac{3}{4}$$

Answer: $\frac{3}{4}$

⚠️ **Watch out:** Many students only divide by 2 or 3 and stop. Always look for the largest common factor if you can.

Q2. Which is larger: $\frac{3}{5}$ or $\frac{5}{9}$?

Method: convert to a common denominator or compare as decimals.

Common denominator: 5 × 9 = 45

$$\frac{3}{5} = \frac{3 \times 9}{5 \times 9} = \frac{27}{45}$$

$$\frac{5}{9} = \frac{5 \times 5}{9 \times 5} = \frac{25}{45}$$

Since $27 > 25$, $\frac{3}{5} > \frac{5}{9}$

Answer: $\frac{3}{5}$ is larger

⚠️ **Watch out:** Comparing only numerators (3 vs 5) or only denominators (5 vs 9) does not work. You must put them on a common base.

Q3. $\frac{2}{3} + \frac{1}{6}$

Common denominator of 3 and 6 is 6.

$\frac{2}{3} = \frac{4}{6}$

So: $\frac{2}{3} + \frac{1}{6} = \frac{4}{6} + \frac{1}{6} = \frac{5}{6}$

Answer: $\frac{5}{6}$

⚠️ **Watch out:** Don't add denominators: $\frac{2}{3} + \frac{1}{6} \neq \frac{3}{9}$.

Q4. $\frac{7}{8} - \frac{3}{10}$

Common denominator of 8 and 10 is 40.

$$\frac{7}{8} = \frac{7 \times 5}{8 \times 5} = \frac{35}{40}$$

$$\frac{3}{10} = \frac{3 \times 4}{10 \times 4} = \frac{12}{40}$$

Subtract: $\frac{35}{40} - \frac{12}{40} = \frac{23}{40}$

Answer: $\mathbf{\frac{23}{40}}$

Q5. Find $\frac{3}{4}$ of 48

"$\frac{3}{4}$ of 48" means:

$$\frac{3}{4} \times 48 = \frac{3 \times 48}{4} = \frac{144}{4} = 36$$

Answer: 36

⚠️ **Watch out:** A classic error is to divide by 3 and multiply by 4 (reversing the fraction). Always do (divide by denominator) then (multiply by numerator).

Q6. $2\frac{1}{3} + 1\frac{3}{4}$

Step 1 – Convert to improper fractions:

$$2\frac{1}{3} = \frac{2 \times 3 + 1}{3} = \frac{7}{3}$$

$$1\frac{3}{4} = \frac{1 \times 4 + 3}{4} = \frac{7}{4}$$

Step 2 – Find common denominator (12):

$$\frac{7}{3} = \frac{28}{12}, \frac{7}{4} = \frac{21}{12}$$

Add: $\frac{28}{12} + \frac{21}{12} = \frac{49}{12}$

Step 3 – Convert back to mixed number:

$\frac{49}{12} = 4\frac{1}{12}$ ($4 \times 12 = 48$, remainder 1)

Answer: $4\frac{1}{12}$

Q7. $\frac{5}{6} \div 2$

Dividing by 2 is the same as multiplying by $\frac{1}{2}$:

$\frac{5}{6} \div 2 = \frac{5}{6} \times \frac{1}{2} = \frac{5}{12}$

Answer: $\frac{5}{12}$

⚠️ **Watch out:** A lot of students do $\frac{5}{6} \div 2 = \frac{5}{6} \div \frac{2}{1}$ then "flip and multiply" correctly – that's fine too. Just don't divide numerator only and leave denominator alone.

Q8. $\frac{2}{9}$ of the class is absent; 28 present.

Fraction present: $1 - \frac{2}{9} = \frac{7}{9}$

Let total students be N.

$$\frac{7}{9} \times N = 28$$

Solve for N: $N = 28 \div \frac{7}{9} = 28 \times \frac{9}{7} = 4 \times 9 = 36$

Answer: 36 students

⚠️ **Watch out:** Many kids divide by $\frac{2}{9}$ instead of $\frac{7}{9}$. Remember: present = 1 − absent.

SECTION B – DECIMALS

Q9. Write $\frac{3}{5}$ as a decimal.

Q10. 4.37 + 2.8 = ?

Q11. 7.2 − 3.45 = ?

Q12. 0.6 × 0.4 = ?

Q13. Round 5.386 to the nearest hundredth (2 decimal places).

Q14. Put these decimals in order from smallest to largest:

0.45, 0.405, 0.5, 0.054

SECTION B – DECIMALS SOLUTIONS

Q9. Write $\frac{3}{5}$ as a decimal

$\frac{3}{5} = \frac{6}{10} = 0.6$

Answer: 0.6

Q10. 4.37 + 2.8

Line up decimal points:

4.37 + 2.80 = 7.17

Answer: 7.17

⚠️ **Watch out:** Don't write 4.37 + 2.8 = 4.615 (treating 0.37 and 0.8 as whole numbers). Always align decimal points.

Q11. 7.2 − 3.45

Write 7.2 as 7.20:

7.20 − 3.45 = 3.75

Answer: 3.75

Q12. 0.6 × 0.4

Ignore decimals first: 6 × 4 = 24.

There is 1 decimal place in each factor → 2 decimal places total.

So: 0.6 × 0.4 = 0.24

Answer: 0.24

⚠️ **Watch out:** Students often say 0.6 × 0.4 = 2.4 because they forget that multiplying by numbers less than 1 makes the number smaller.

Q13. Round 5.386 to nearest hundredth

Hundredth place = 2nd decimal = 8 in 5.386

Look at the next digit (thousandth) = 6 (≥ 5) → round up.

So 5.386 → 5.39

Answer: 5.39

Q14. Order 0.45, 0.405, 0.5, 0.054 (smallest to largest)

Make them all 3 decimal places:

0.45 = 0.450

0.405 = 0.405

0.5 = 0.500

0.054 = 0.054

Now compare: 0.054 < 0.405 < 0.450 < 0.500

Answer: 0.054, 0.405, 0.45, 0.5

⚠️ **Watch out:** Kids often think "405 is bigger than 45, so 0.405 > 0.45". Extra zeros after the decimal do not automatically make numbers larger – compare place by place.

SECTION C – RATIOS

Q15. Simplify the ratio 18 : 24 to its lowest terms.

Q16. In a class, the ratio of boys to girls is 3 : 5.

There are 20 girls. How many boys are there?

Q17. Orange juice concentrate and water are mixed in the ratio 2 : 3 (concentrate : water).

If you use 750 mL of orange juice concentrate, how much water do you need?

Q18. There are 60 students in a year group.

The ratio of left-handed to right-handed students is 4 : 1. How many students are left-handed?

Q19. In a recipe, the ratio of flour : sugar is 5 : 2.

If you have 280 g of flour, how much sugar do you need to keep the same ratio?

Q20. On a map, the scale is 1 : 50 000 (1 cm on the map represents 50 000 cm in real life).

Two towns are 3.6 cm apart on the map. What is the actual distance between the towns in kilometres?

SECTION C – RATIOS SOLUTIONS

Q15. Simplify 18 : 24

Find HCF of 18 and 24 = 6.

18 : 24 = (18 ÷ 6) : (24 ÷ 6) = 3 : 4

Answer: 3 : 4

Q16. Boys : girls = 3 : 5, girls = 20

3 : 5 means:

boys = 3 parts

girls = 5 parts

If 5 parts = 20 girls, 1 part = 20 ÷ 5 = 4

Boys = 3 parts = 3 × 4 = 12

Answer: 12 boys

Q17. Orange juice : water = 2 : 3, orange juice = 750 mL

2 : 3 means:

2 parts = concentrate

3 parts = water

If 2 parts = 750 mL, 1 part = 750 ÷ 2 = 375 mL

Water (3 parts) = 3 × 375 = 1125 mL

Answer: 1125 mL of water

⚠️ **Watch out:** Common error is to divide 750 by 3 instead of 2, or to multiply by 3 without first finding the value of 1 part.

Q18. Left-handed : right-handed = 4 : 1, total = 60

Total parts = 4 + 1 = 5.

1 part = 60 ÷ 5 = 12

Left-handed = 4 parts = 4 × 12 = 48

Answer: 48 left-handed students

Q19. Flour : sugar = 5 : 2, flour = 280 g

5 : 2 means:

Flour = 5 parts

Sugar = 2 parts

If 5 parts = 280 g, 1 part = 280 ÷ 5 = 56 g

Sugar (2 parts) = 2 × 56 = 112 g

Answer: 112 g of sugar

Q20. Scale 1 : 50 000, map distance = 3.6 cm

Real-life distance:

3.6 cm × 50 000 = 180 000 cm

Convert to kilometres:

100 cm = 1 m

1000 m = 1 km

So 100 × 1000 = 100 000 cm = 1 km

180 000 cm ÷ 100 000 = 1.8 km

Answer: 1.8 km