Test answers - Adding and subtracting fractions

Year: Year 4 · Duration: 35 minutes · /20

Answer to Question 1 (4 marks)

a. 9 ÷ 3 = 3, so 2 × 3 = 6: $\frac{6}{9}$ (1 mark).
b. 8 ÷ 4 = 2, so 6 ÷ 2 = 3: $\frac{3}{4}$ (1 mark).
c. $\frac{3}{4} = \frac{6}{8}$, and $\frac{6}{8}$ is bigger than $\frac{5}{8}$, so $\frac{3}{4}$ is bigger (2 marks).

Answer to Question 2 (4 marks)

a. The denominators are both 9, so add only the numerators: 3 + 4 = 7. The answer is $\frac{7}{9}$, which is less than 1, so it stays a proper fraction (1 mark).
b. The denominators match, so take 3 from 7 in the numerator: 7 − 3 = 4, giving $\frac{4}{10}$. Dividing the top and the bottom by 2 gives the simpler form $\frac{2}{5}$ (1 mark).
c. Add the numerators: 5 + 3 = 8, so the total is $\frac{8}{6}$. Six sixths make 1 whole, leaving $\frac{2}{6}$, so the answer is $1\frac{2}{6} = \mathbf{1\frac{1}{3}}$ (2 marks: 1 for $\frac{8}{6}$, 1 for the mixed number).

Answer to Question 3 (4 marks)

a. Step 1: find one fifth of 40 by dividing by the denominator: 40 ÷ 5 = 8. Step 2: multiply by the numerator to get three fifths: 3 × 8 = **24** (2 marks: 1 for each step). Check: $\frac{5}{5}$ of 40 would be 5 × 8 = 40.
b. Step 1: one third of £36 is 36 ÷ 3 = £12. Step 2: two thirds is 2 × £12 = **£24** (2 marks: 1 for each step). Check: the remaining third is £12, and £24 + £12 = £36.

Answer to Question 4 (4 marks)

a. 3 + 4 = 7, so $\frac{7}{12}$ (1 mark).
b. 12 − 7 = 5, so $\frac{5}{12}$ is left (1 mark).
c. 5 and 12 have no common factor, so $\frac{5}{12}$ is already in its simplest form (1 mark).
d. Yes: $\frac{3}{12} = \frac{1}{4}$, so he is **right** (1 mark).

Answer to Question 5 (4 marks)

a. 80 ÷ 10 = 8 and 3 × 8 = **24 books** (1 mark).
b. 80 ÷ 5 = 16 and 2 × 16 = **32 books** (1 mark).

c. $^{2}/_{5} = {}^{4}/_{10}$. Animals and story books: $^{3}/_{10} + {}^{4}/_{10} = {}^{7}/_{10}$. Space books: $^{10}/_{10} - {}^{7}/_{10} = \mathbf{{}^{3}/_{10}}$ (2 marks).