



Calculating with fractions

About 50 minutes No calculator 45 marks

Date _____

A Do Now

The first question is what today's lesson needs. The others bring back earlier topics.

A1 Needed today [2 marks] **A2** Last lesson [2 marks]

Write 0.82 as a fraction in its simplest form.

Answer

 $A = 2 \times 3^2 \times 7$ and $B = 2^3 \times 7$.
Find the lowest common multiple of A and B . Give your answer as an ordinary number.

Answer

A3 Key Stage 3 [2 marks] **A4** Key Stage 3 [2 marks]

A triangle has the same area as a rectangle measuring 2 cm by 18 cm. The base of the triangle is 6 cm. Find the height of the triangle.

Answer

5 numbers have a mean of 17. 4 of the numbers are 2, 10, 16, 20. Find the other number.

Answer

B Example, then your turn

Your teacher works through each example with you. Then try the one beside it.

EXAMPLE 1Work out $2\frac{2}{3} + 1\frac{3}{4}$. Give your answer as a mixed number.**Hint** Write both as improper fractions, then use a common denominator of 12.**B1** Work out $3\frac{1}{6} - 1\frac{4}{5}$. Give your answer as a mixed number. [2 marks]

Answer

EXAMPLE 2

Work out $1\frac{3}{4} \div 2\frac{1}{3}$.

Hint Write both as improper fractions. Dividing by a fraction is the same as multiplying by its reciprocal.

B2 Work out $2\frac{2}{3} \div 1\frac{1}{9}$. Give your answer as a mixed number. [3 marks]

Answer

c Practice

C1 Write 750 g as a fraction of 2 kg. [2 marks]
Give your answer in its simplest form.

Answer

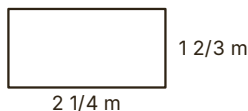
C3 Work out $5 \div \frac{2}{3}$. Give your answer as a mixed number. [2 marks]

Answer

C5 Tom spends $\frac{2}{5}$ of his money on a game, then $\frac{1}{3}$ of what is left on food. What fraction of his money does he have left? [2 marks]

Answer

C7 A rectangle is $2\frac{1}{4}$ m long and $1\frac{2}{3}$ m wide. Work out its area. Give your answer as a mixed number. [2 marks]



Not drawn accurately

Answer

C2 Work out $\frac{7}{10} \times \frac{5}{14}$. Give your answer in its simplest form. [2 marks]

Answer

C4 Which is larger, $\frac{5}{7}$ or $\frac{7}{10}$? Show how you decide. [2 marks]

Answer

C6 $\frac{3}{8}$ of a number is 27. What is the number? [2 marks]

Answer

C8 Work out $\left(\frac{1}{2} + \frac{2}{5}\right) \div \frac{3}{10}$. [2 marks]

Answer

D Exam-style questions

D1 Ria says, " $2\frac{1}{2} \times 3\frac{1}{3} = 6\frac{1}{6}$, because $2 \times 3 = 6$ and $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$." [2 marks]

Explain why Ria is wrong, and work out the correct answer.

D2 A baker has a bag holding $7\frac{1}{2}$ kg of flour. Each loaf uses $\frac{5}{8}$ kg of flour.

(a) How many loaves can be made from the whole bag? [2 marks]

Answer

(b) She makes 9 loaves. What fraction of the bag of flour is left? Give your answer in its simplest form. [3 marks]

Answer

(c) She uses the flour that is left to make rolls. Each roll uses $\frac{3}{16}$ kg. How many rolls does she make? [2 marks]

Answer

Total for D2: 7 marks

D3 There are 480 students in a school. $\frac{5}{12}$ of the students are boys. $\frac{3}{10}$ of the boys walk to school and $\frac{2}{7}$ of the girls walk to school. What fraction of all the students walk to school? Give your answer in its simplest form. [4 marks]

Answer

E Extension

No route is given. The hints are at the end of the sheet. Use one at a time.

E1 Two fractions add up to $1\frac{1}{12}$. The larger one minus the smaller one is $\frac{1}{4}$. Find the two fractions. [3 marks]

Answer

Extension hints

Cover these with paper. Uncover one at a time.

- E1** **Hint 1** Add the two facts together. What does that give you?
- Hint 2** Twice the larger fraction = $1\frac{1}{12} + \frac{1}{4} = \frac{16}{12}$.
- Hint 3** The larger fraction is $\frac{16}{24} = \frac{2}{3}$. The smaller is $\frac{2}{3} - \frac{1}{4} = \frac{5}{12}$.

How did it go?

Colour one circle on each line: not yet, nearly, yes.

I can add, subtract, multiply and divide fractions and mixed numbers. ☐ ☐ ☐

I can write one quantity as a fraction of another. ☐ ☐ ☐

I can solve problems with fractions of amounts. ☐ ☐ ☐