Worksheet - Fractions: thirds, quarters and halves

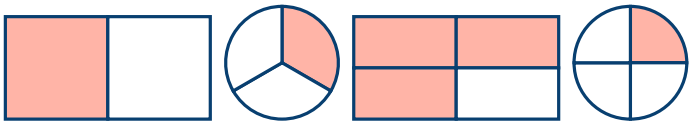
Year: Year 2 · 20

Show your working.

Question 1

Question 1 – Name the fraction *(Section A · Practice)*

Write the fraction that is shaded in each picture.



a. The rectangle split into 2 parts
b. The circle split into 3 parts
c. The rectangle split into 4 parts, with 3 shaded
d. The circle split into 4 parts

Question 2

Question 2 – Equal or not equal? *(Section A · Practice)*

A baker cuts four cakes. Cake A is cut into 2 equal parts. Cake B is cut into 2 parts of different sizes. Cake C is cut into 4 equal parts. Cake D is cut into 3 parts, two big and one small.

a. Which cakes are cut into halves? Explain.
b. Which cake is cut into quarters?
c. Why can you not call the parts of cake D thirds?

Question 3

Question 3 – Halves of amounts *(Section A · Practice)*

Find half of each amount. Divide by 2.

a. Half of 8
b. Half of 14
c. Half of 20
d. Half of 36
e. Half of 50

Question 4

Question 4 – Quarters and thirds of amounts *(Section A · Practice)*

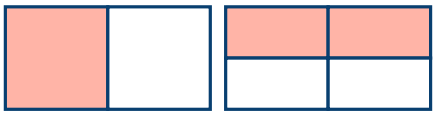
Work out each fraction of the amount.

a. A quarter of 12
b. A quarter of 20
c. A third of 9
d. A third of 18
e. A third of 30
f. A quarter of 40

Question 5

Question 5 – Equivalent fractions *(Section A · Practice)*

Use the pictures to fill in the missing number.



a. $\frac{1}{2} = \frac{\quad}{4}$
b. $\frac{2}{4} = \frac{1}{\quad}$
c. $\frac{\quad}{2}$ = 1 whole
d. $\frac{4}{\quad}$ = 1 whole

Question 6

Question 6 – Non-unit fractions *(Section A · Practice)*

Find each fraction of the amount. Write down the unit fraction first.

a. $\frac{3}{4}$ of 8
b. $\frac{2}{3}$ of 6
c. $\frac{3}{4}$ of 16
d. $\frac{2}{3}$ of 21
e. $\frac{2}{4}$ of 12

Question 7

Question 7 – Sharing a pizza *(Section B · Real-life practice)*

Four friends order a large pizza for lunch. The pizza is cut into 8 equal slices. Hana eats 2 slices, Joe eats a quarter of the whole pizza, and Mia and Ben share the rest equally between them.

a. What fraction of the pizza does Hana eat? Write it as a quarter.

b. How many slices does Joe eat?
c. How many slices are left for Mia and Ben, and how many slices does each of them get?
d. What fraction of the pizza does Mia eat?

Question 8

Question 8 – Pocket money fractions *(Section B · Real-life practice)*

Jack gets 20p pocket money each week. He puts half of it into his money jar. He spends a quarter of the 20p on a bouncy ball, and he gives a quarter to his little sister.

a. How much does Jack put into his money jar?
b. How much does he spend on the bouncy ball?
c. How much does he give to his sister?
d. Add up the three amounts. What do you notice about the total? What fraction does it show?

Question 9

Question 9 – Cooking with a recipe *(Section B · Real-life practice)*

Mum is making flapjacks for the school fair. The recipe uses 12 oats scoops and 8 spoons of syrup. Mum wants to make a smaller batch. She uses a third of the oats and a quarter of the syrup. Then she uses half of her 10 raisins.

Ingredient	Full recipe	Fraction used
Oats scoops	12	one third
Spoons of syrup	8	one quarter
Raisins	10	one half

a. How many oats scoops does Mum use?
b. How many spoons of syrup does she use?
c. How many raisins does she use?
d. Mum says, "I use fewer raisins than oats scoops." Is she right?

Question 10

Question 10 – A chocolate bar *(Section B · Real-life practice)*

Layla has a chocolate bar with 12 squares. She gives one third of the bar to her brother Tom. She eats a quarter of the bar herself. The rest of the bar goes into the fridge for tomorrow.

a. How many squares does Tom get?
b. How many squares does Layla eat?
c. How many squares go into the fridge?
d. Is the part in the fridge more or less than half of the bar? Explain.

Question 11

Question 11 – The school play *(Section B · Real-life practice)*

There are 24 children in the school play. A third of the children are animals. A quarter of the children are in the band. The rest are the audience helpers. The teacher gives out 2 badges to each child in the band.

a. How many children are animals?
b. How many children are in the band?
c. How many children are audience helpers?
d. How many badges does the teacher give out?

Question 12

Question 12 – Garden flower beds *(Section B · Real-life practice)*

Grandad has a flower bed with 16 plants. He plants a half of the bed with tulips. He plants a quarter of the bed with daffodils. The rest of the bed has roses. Then 2 of the roses are eaten by snails.

a. How many tulips are there?
b. How many daffodils are there?
c. How many roses are there at the start?
d. How many roses are left after the snails?

Question 13

Question 13 – Time and fractions *(Section B · Real-life practice)*

The school day at Greenfield school starts at 9 o'clock. Break time is a quarter of an hour. Lunch is half an hour. A film in the hall lasts one hour, and the class watch a third of it before the bell rings.

a. How many minutes is a quarter of an hour?
b. How many minutes is half an hour?
c. How many minutes of the film does the class watch? Remember an hour is 60 minutes.
d. The class use break and lunch together. How many minutes is that altogether?

Question 14

Question 14 – Fraction of a ribbon *(Section B · Real-life practice)*

Anna is wrapping presents. She has a ribbon that is 20 centimetres long. She cuts it into 4 equal pieces. She uses 3 of the pieces on a big present and keeps the last piece for a small present.

a. How long is each piece of ribbon?

b. What fraction of the ribbon does she use on the big present?
c. How many centimetres is that?
d. How many centimetres does she keep?

Question 15

Question 15 – The class sweet tin *(Section C · Problem solving)*

The class sweet tin has 36 sweets in it on Monday. On Monday the teacher gives a third of the sweets to the children who read well. On Tuesday the class eat a quarter of the sweets that were left in the tin after Monday and a half of what is left after that. The head teacher says that it is a bit more than half gone.

Day	What happens
Monday	Teacher takes one third of the 36 sweets
Tuesday	Class eat one quarter of what is left
Wednesday	Class eat half of what is left now

a. How many sweets does the teacher give on Monday?
b. How many sweets are left after Monday?
c. How many sweets does the class eat on Tuesday and how many are left?
d. How many sweets does the class eat on Wednesday?
e. How many sweets are left at the end? Is the head teacher right that more than half have gone? Explain.

Question 16

Question 16 – Sports club *(Section C · Problem solving)*

Sam runs a sports club with 24 children. A half of the children play football. A quarter of the children play tennis. A third of the tennis players are girls. The rest of the children play basketball. The club has 3 footballs for each 4 children who play football.

a. How many children play football?
b. How many children play tennis?
c. How many children play basketball?
d. How many of the tennis players are girls?
e. How many footballs does the club have? Show how you know.

Question 17

Question 17 – Painting the fence *(Section C · Problem solving)*

Dad and the children are painting a long fence. The fence has 24 equal panels. Dad paints a quarter of the fence in the morning. The children paint a half of the fence in the afternoon. They plan to paint the rest on Sunday, and they paint half of the Sunday panels in a different colour.

a. How many panels does Dad paint?
b. How many panels do the children paint?
c. How many panels are left for Sunday?
d. How many panels are painted a different colour on Sunday?
e. What fraction of the Sunday panels are painted the different colour? Explain.

Question 18

Question 18 – The birthday cake *(Section C · Problem solving)*

Layla's mum makes a rectangular birthday cake. She cuts it into 12 equal pieces. The cake is shared at the party. A third of the pieces go to the children at the table by the window. A quarter of the pieces go to the grown-ups. Then 2 pieces go to the neighbours.

a. How many pieces do the children at the window get?
b. How many pieces do the grown-ups get?
c. How many pieces are left after the neighbours get 2?
d. What fraction of the cake do the children at the window get? Write it with the numerator and denominator.
e. Layla says, "Half of the cake has gone." Is she right? Explain.

Question 19

Question 19 – Marbles in the bag *(Section C · Problem solving)*

Jamal has 24 marbles in a bag. He gives a third of the marbles to his brother and then plays a game with his friend. After the game he has a half of the marbles that he had after giving some to his brother. He then buys 5 more marbles.

a. How many marbles does Jamal give to his brother?
b. How many marbles does he have after giving some to his brother?
c. How many marbles does he have after the game?
d. How many marbles does he have after buying 5 more?
e. Does he have more or fewer than at the start? Explain how many.

Question 20

Question 20 – Challenge: fraction puzzles *(Section D · Challenge)*

Otto has set you some fraction puzzles. Explain each answer in words.

a. A quarter of a number is 6. What is the number?
b. Two thirds of a number is 8. What is the number?
c. Which is bigger: a half of 10 or a quarter of 24? Show how you know.
d. Hana says that two quarters of a pizza is bigger than a half of the same pizza. Is she right? Use a picture or words to explain.