Worksheet - Fractions: unit and non-unit

Year: Year 3 · 20

Show your working.

Question 1

Question 1 – Unit or non-unit? *(Section A · Practice)*

Say if each fraction is a unit fraction or a non-unit fraction.

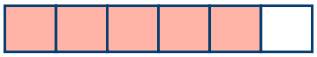
a. $\frac{1}{6}$
b. $\frac{3}{5}$
c. $\frac{1}{10}$
d. $\frac{7}{8}$
e. $\frac{2}{3}$

Question 2

Question 2 – Name the shaded fraction *(Section A · Practice)*

Write the fraction of each bar that is shaded. Say if it is a unit or non-unit fraction.

a.


b.


c.


d.


Question 3

Question 3 – Counting in tenths *(Section A · Practice)*

Count on in tenths and fill in the gaps.

a. $\frac{1}{10}$, $\frac{2}{10}$, __ , $\frac{4}{10}$
b. $\frac{6}{10}$, $\frac{7}{10}$, __ , __
c. $\frac{10}{10}$ = __ whole
d. $\frac{5}{10}$ of a line is the same as $\frac{?}{2}$

Question 4

Question 4 – Unit fractions of amounts *(Section A · Practice)*

Work out each unit fraction of an amount. Show how you check each answer.

a. $\frac{1}{2}$ of 18
b. $\frac{1}{3}$ of 21
c. $\frac{1}{4}$ of 32
d. $\frac{1}{5}$ of 45
e. $\frac{1}{10}$ of 60

Question 5

Question 5 – Non-unit fractions of amounts *(Section A · Practice)*

Work out each fraction of an amount. Show both steps.

a. $\frac{2}{3}$ of 12
b. $\frac{3}{4}$ of 20
c. $\frac{4}{5}$ of 30
d. $\frac{3}{10}$ of 50
e. $\frac{5}{8}$ of 24

Question 6

Question 6 – Add and subtract *(Section A · Practice)*

Work out each answer.

a. $\frac{3}{10} + \frac{4}{10}$
b. $\frac{5}{8} + \frac{2}{8}$
c. $\frac{9}{10} - \frac{4}{10}$
d. $\frac{6}{7} - \frac{5}{7}$
e. $\frac{1}{5} + \frac{2}{5}$

Question 7

Question 7 – Pizza night *(Section B · Real-life practice)*

Ella’s family order a large pizza cut into 8 equal slices. Ella eats 2 slices, her brother eats 3 slices and her dad eats 1 slice.

a. What fraction of the pizza does Ella eat? Is it a unit or non-unit fraction?
b. What fraction does her dad eat?
c. What fraction do all three eat together?
d. What fraction is left for her mum?

Question 8

Question 8 – The classroom sweets *(Section B · Real-life practice)*

Mr Hill has 24 sweets for a class prize. He gives $\frac{1}{4}$ of the sweets to the winning team, $\frac{1}{3}$ to the second team and keeps the rest.

a. How many sweets does the winning team get?
b. How many sweets does the second team get?
c. How many sweets are given out altogether?
d. How many sweets does Mr Hill keep?

Question 9

Question 9 – Pocket money *(Section B · Real-life practice)*

Sam has £20 pocket money. He spends $\frac{2}{5}$ on a book, saves $\frac{1}{5}$ and spends $\frac{1}{10}$ on sweets.

a. How much does he spend on the book?
b. How much does he save?
c. How much does he spend on sweets?
d. How much money is left?

Question 10

Question 10 – The football team *(Section B · Real-life practice)*

A football club has 30 children. $\frac{3}{5}$ of them play in defence, $\frac{1}{10}$ are goalkeepers and the rest play in attack.

a. How many children play in defence?
b. How many are goalkeepers?
c. How many play in attack?
d. What fraction of the children play in attack? Write it as tenths.

Question 11

Question 11 – A bottle of squash *(Section B · Real-life practice)*

Ravi's bottle holds 1 litre (1000 ml). He drinks $\frac{3}{10}$ on Monday and $\frac{4}{10}$ on Tuesday.

a. How much does he drink on Monday?
b. How much does he drink on Tuesday?
c. What fraction of the bottle is left?
d. How much squash is left in millilitres?

Question 12

Question 12 – Gardening *(Section B · Real-life practice)*

Mrs Singh plants 40 bulbs. She plants $\frac{1}{2}$ of the bulbs in a flower bed, $\frac{1}{4}$ in pots and the rest by the gate.

a. How many bulbs go in the flower bed?
b. How many bulbs go in pots?
c. How many bulbs are by the gate?
d. What fraction goes by the gate?

Question 13

Question 13 – The school trip *(Section B · Real-life practice)*

A school coach has 36 seats. $\frac{2}{3}$ of the seats are filled by children, $\frac{1}{6}$ by adults and the rest are empty.

a. How many seats are filled by children?
b. How many seats are filled by adults?
c. How many seats are empty?
d. What fraction of the coach is empty? Write it as a unit fraction.

Question 14

Question 14 – Time and fractions *(Section B · Real-life practice)*

There are 60 minutes in an hour. Eva spends different fractions of an hour on her homework.

a. How many minutes is $\frac{1}{2}$ of an hour?
b. How many minutes is $\frac{1}{4}$ of an hour?
c. How many minutes is $\frac{3}{4}$ of an hour?
d. Eva reads for $\frac{1}{10}$ of an hour and writes for $\frac{1}{5}$ of an hour. How many minutes is that altogether?

Question 15

Question 15 – Problem: the party food *(Section C · Problem solving)*

Priya is planning a party for 24 children. She buys 3 types of food. The table shows the fraction of the food she buys for each type.

Food	Fraction
Pizza	$\frac{1}{2}$
Cake	$\frac{1}{3}$

Food	Fraction
Fruit	the rest

a. She buys 24 pieces of food in all. How many pieces are pizza if $\frac{1}{2}$ of the food is pizza?
b. How many pieces are cake if $\frac{1}{3}$ of the food is cake?
c. What fraction of the food is fruit if the rest is fruit?
d. How many pieces of fruit is that? Check that all the food adds to 24.

Question 16

Question 16 – Problem: the library books *(Section C · Problem solving)*

The school library has 60 books on a shelf. $\frac{2}{5}$ are story books, $\frac{3}{10}$ are information books and the rest are poetry books.

a. How many story books are there?
b. How many information books?
c. How many poetry books are there?
d. What fraction of the books are poetry? Explain how you can tell it is the same as the information books.

Question 17

Question 17 – Problem: the jigsaw *(Section C · Problem solving)*

Nina has a jigsaw with 100 pieces. On Saturday she completes $\frac{3}{10}$ of it. On Sunday she completes $\frac{4}{10}$ of it.

a. How many pieces does she complete on Saturday?
b. How many on Sunday?
c. What fraction of the jigsaw is complete?
d. She says "I have done more than half." Is she right? How many pieces are left?

Question 18

Question 18 – Problem: spot the mistakes *(Section C · Problem solving)*

Tom does his fractions homework. Check each answer. If it is wrong, find the mistake and write the right answer.

a. $\frac{1}{4}$ of 20 = 80
b. $\frac{3}{5}$ of 20 = 12
c. $\frac{2}{7} + \frac{3}{7} = \frac{5}{14}$
d. $\frac{7}{9} - \frac{2}{9} = \frac{5}{9}$

Question 19

Question 19 – Problem: the big race *(Section C · Problem solving)*

A school sports day has a race of 400 metres. Three runners have run different fractions of the race when the whistle blows.

a. Amy has run $\frac{3}{4}$ of the race. How many metres is that?
b. Ben has run $\frac{7}{10}$ of the race. How many metres?
c. Who has run further, Amy or Ben? By how many metres?
d. Cara has run $\frac{1}{2}$ of the race. How far must she still run?

Question 20

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

A bag holds 36 counters. Ali takes out some of them: he takes the unit fraction $\frac{1}{4}$ of the counters. Then Beth takes the unit fraction $\frac{1}{3}$ of the counters that are left.

a. How many counters does Ali take?
b. How many are left after Ali has taken his?
c. How many counters does Beth take?
d. What fraction of the original 36 counters is left in the bag at the end? Write it in simplest form.