Worksheet - Decimals and thousandths

Year: Year 5 · 20

Show your working.

Question 1

Question 1 – Fractions to decimals *(Section A · Practice)*

Write each of these as a decimal.

a. $\frac{3}{10}$
b. $\frac{7}{100}$
c. $\frac{9}{1000}$
d. $\frac{47}{100}$
e. 4 and $\frac{6}{10}$
f. $\frac{125}{1000}$

Question 2

Question 2 – Value of a digit *(Section A · Practice)*

Look at the number 4.563.

Ones	.	Tenths	Hundredths	Thousandths
4	.	5	6	3

a. What is the value of the digit 5?
b. What is the value of the digit 6?
c. What is the value of the digit 3?
d. Write the value of the digit 9 in 0.092 and in 9.02.

Question 3

Question 3 – Decimals to fractions *(Section A · Practice)*

Write each decimal as a fraction in its simplest form.

a. 0.5
b. 0.25
c. 0.8
d. 0.125
e. 0.06

Question 4

Question 4 – Compare decimals *(Section A · Practice)*

Write <, > or = in each box. Add zeros to help you.

a. 0.35 ☐ 0.305
b. 2.7 ☐ 2.07
c. 0.6 ☐ 0.60
d. 5.099 ☐ 5.1

Question 5

Question 5 – Order the decimals *(Section A · Practice)*

Here are five decimals: 0.4, 0.04, 0.404, 4.004, 0.44.

a. Write them in order, smallest first.
b. Write them in order, largest first.
c. Which decimal is closest to 0.5?

Question 6

Question 6 – Rounding decimals *(Section A · Practice)*

Round each number to the nearest whole number or to one decimal place, as shown.

a. 6.482 to the nearest whole number
b. 6.482 to one decimal place
c. 12.95 to the nearest whole number
d. 12.95 to one decimal place
e. 0.375 to one decimal place
f. 0.375 to the nearest whole number

Question 7

Question 7 – 100 metres at sports day *(Section B · Real-life practice)*

Four children run 100 metres at sports day. Their times in seconds are in the table.

Runner	Time (s)
Zara	12.45
Mo	12.5
Eve	12.405
Dan	12.09

a. Who won the race (the smallest time)?
b. Put the times in order, fastest first.

c. How much faster was the winner than Mo?
d. Round each time to the nearest second.

Question 8

Question 8 – At the fruit market *(Section B · Real-life practice)*

At the market, Tia buys 0.4 kg of grapes, 0.75 kg of cherries and 1.250 kg of apples.

a. Write 0.75 kg and 0.4 kg as fractions of a kilogram.
b. Which fruit has the greatest mass? Which has the least?
c. How many kilograms of fruit does Tia buy in all?
d. Rounded to the nearest kilogram, how much is the total?

Question 9

Question 9 – Juice in the kitchen *(Section B · Real-life practice)*

Dad is making juice for a party. He has jugs holding 1.5 litres, 0.75 litres and 0.125 litres.

a. Write each volume in millilitres. (1 litre = 1,000 ml.)
b. Dad pours the 0.75 litre jug and the 0.125 litre jug into a big bowl. How many litres are in the bowl?
c. He needs 3 litres in total. How much more juice does he need?
d. Each cup holds 0.25 litres. How many cups can he fill from the big bowl?

Question 10

Question 10 – Swimming lengths *(Section B · Real-life practice)*

At the swimming pool Ben times four lengths of the pool. The times (in seconds) are 31.52, 30.9, 31.045 and 30.95.

a. Order the times, fastest first.
b. Which two times are closest together?
c. Round the slowest time to one decimal place.
d. The pool record is 29.99 seconds. How far is Ben's fastest time from the record?

Question 11

Question 11 – Sweets by the thousand *(Section B · Real-life practice)*

In the sweet factory one boiled sweet has a mass of 0.025 kg.

a. What is the mass of 10 sweets?
b. What is the mass of 100 sweets?
c. What is the mass of 1,000 sweets?
d. A tray of sweets has a mass of 2.5 kg. How many sweets are on the tray?

Question 12

Question 12 – Prices at the bakery *(Section B · Real-life practice)*

A bakery sells buns for £0.45 each. The baker makes 100 buns every morning.

a. What is the cost of 10 buns?
b. What do the 100 buns cost altogether?
c. The baker sells 1,000 buns in one week. How much money is that?
d. A box of 10 flapjacks costs £7.50. What is the price of one flapjack?

Question 13

Question 13 – Rainfall in the garden *(Section B · Real-life practice)*

The rain gauge in Mia's garden measures how many centimetres of rain fall each day.

Day	Mon	Tue	Wed	Thu	Fri
Rain (cm)	0.35	0.305	0.5	0	1.2

a. Which day was the wettest and which was the driest?
b. Put Monday, Tuesday and Wednesday in order, smallest first.
c. Round each amount to one decimal place.
d. What is the total rainfall for the week?

Question 14

Question 14 – Heights of sunflowers *(Section B · Real-life practice)*

Sam measures four sunflowers in metres: 1.452, 1.5, 1.045 and 1.54.

a. Write them in order, tallest first.
b. What is the difference between the tallest and shortest?
c. Round each to the nearest tenth of a metre.
d. Sam says: "1.5 m is shorter than 1.452 m because 1.452 has more digits." Explain why he is wrong.

Question 15

Question 15 – Long jump at the school sports *(Section C · Problem solving)*

Five children took part in the long jump. The table shows the length of their best jump in metres.

Child	Jump (m)
Amir	4.62
Beth	4.6
Chen	4.065

Child	Jump (m)
Dee	4.7
Eli	4.059

a. Who won and who came last?
b. Write all five jumps in order, longest first.
c. How much further did the winner jump than Beth?
d. Round each jump to the nearest metre. What do you notice?
e. Dee and Amir are jumping in a team. Find their combined jump length, and say whether it is more than 9 m.

Question 16

Question 16 – Petrol prices *(Section C · Problem solving)*

Three petrol stations show the price of one litre of petrol, in pounds, as 3 decimal places.

Station	Price per litre (£)
Quickfill	1.459
Greenway	1.449
Hilltop	1.5

Mr Patel is on a long journey and wants to buy petrol as cheaply as he can.

a. Which station is the cheapest and which is the dearest?
b. Round each price to one decimal place. What do you notice?
c. How much does 10 litres cost at Quickfill? How much do 100 litres cost?
d. How much more do 100 litres cost at Quickfill than at Greenway?
e. Mr Patel says: "The rounded prices are all the same so it does not matter where I buy." Explain why he should still choose carefully.

Question 17

Question 17 – Growing a bean plant *(Section C · Problem solving)*

In science, a class measures the height of a bean plant every day. The heights are in centimetres.

Day	Height (cm)
Day 1	3.2
Day 2	3.45
Day 3	3.9
Day 4	4.125
Day 5	4.5

a. How much did the plant grow between Day 1 and Day 5?
b. Between which two days did it grow the most?
c. Write the Day 4 height as a mixed number in its simplest form.
d. The plant grows by the same amount each day as its average growth over the four days. Find its height on Day 6.
e. Write the Day 1 height in millimetres.

Question 18

Question 18 – Baking for the school fair *(Section C · Problem solving)*

A recipe for one batch of scones needs 0.25 kg of flour, 0.125 kg of butter and 0.075 kg of sugar. The cook wants to bake for the school fair.

Ingredient	One batch (kg)
Flour	0.25
Butter	0.125
Sugar	0.075

a. How much flour is needed for 10 batches?
b. How much butter and sugar are needed for 100 batches? Give both in kilograms.
c. Write the amount of butter for one batch in grams.
d. The cook has only one tenth of a batch of sugar left. How much sugar is that? Give your answer in kilograms and in grams.
e. A kilogram of flour costs £1.20. How much does the flour for 100 batches cost?

Question 19

Question 19 – Digit cards *(Section C · Problem solving)*

Kai has four digit cards, **3, 5, 7 and 0**, and a decimal point card. He puts the point after the first digit each time, so every number looks like __ . __ __ __ and he uses each digit card once.

a. What is the largest number he can make?
b. What is the smallest number he can make?
c. Which number is closest to 5? How far from 5 is it?
d. Write the smallest number from part (b) as a fraction with denominator 1,000.
e. Round the number in part (a) to one decimal place.

Question 20

Question 20 – Challenge: the mystery decimal *(Section D · Challenge)*

Jade is thinking of a decimal that has three decimal places and a 3 in the ones column. She gives these clues:

- To the nearest whole number it is 4.

- To one decimal place it is 3.5.
- The hundredths digit is 3 more than the thousandths digit.
- The three digits after the decimal point are all different.
- All four digits of the number add up to 13.

a. Between which two decimals (with two decimal places) must the number lie? Explain.
b. Find the number. Show how the clues remove the other possibilities.