Next Steps Question Banks

BLUE

Division - including recurring decimals

What is 13 ÷ 3. Give your answer as a recurring decimal.

Work out 25 ÷ 6. Give your answer rounded to 2 d.p.

Work out 2 ÷ 9. Give your answer rounded to 1 d.p.

Use division to decide which is the biggest out of $\frac{3}{8}$ and $\frac{2}{5}$.

Decide which is the biggest out of $\frac{5}{8}$ and $\frac{2}{3}$.

Work out 100 ÷ 7 giving your answer to 2 d.p.

3 people split a bill of £32.00. How much should they each pay to fairly cover the bill?

Use division and recurring decimal notation to turn $\frac{5}{6}$ into a decimal.

John drives 158 miles in 3 hours. What was his average speed in miles per hour? Give your answer to 1 d.p.

The area of a rectangle is 45.2cm^2. The length is 7cm. What is the width? Give your answer to 2 d.p.

Twenty people are at a restaurant. They share the bill of £451.40 equally between them. How much will they each pay?

At a safari park, Each Zebra need at least 60 square metres of space. If there are 5450 square metres available, how many Zebras can the park have?

£280 is shared equally between 16 people. How much will each person get?

A pie chart is used to illustrate how 60 children get to school. How many degrees would each child be worth on the pie chart?

Tim the baker uses 3990g of flour to make some bread rolls. A bread roll needs 70g of flour. How many bread rolls has Tim made?

A group of 25 people club together for the National Lottery and win £141,950. How much will they each get?

There are 11,384 at a music festival. At least one steward is needed for every 80 spectators. How many stewards are needed?

Share a £247 bill between 20 people.

15.6 hectares of land is divided equally into 60 allotments. What is the size of each allotment?

How many full classes of 30 can a school from 1400 pupils?

Written methods for addition and subtraction of fractions (including mixed numbers) with the same denominator

If Ethan has 3 bars of chocolate and he eats 1 and $\frac{2}{5}$ how much does he have left?

James has 2 pizzas and Tim has 2 and $\frac{1}{4}$ pizzas. Between them they eat 1 and $\frac{3}{4}$ pizzas. How much do they have left?

How much greater is $5\frac{2}{5}$ than $3\frac{4}{5}$?

How much less is $3\frac{2}{7}$ than $8\frac{1}{7}$?

Which is greater $2\frac{2}{5} + 1\frac{1}{5}$ or $4\frac{4}{5} - 1\frac{1}{5}$?

At a party there are 4 cakes to share between everyone. The boys eat $1\frac{2}{8}$ cakes and the girls eat 1 and $\frac{7}{8}$ cakes. How much cake is left?

If you start with 10 and subtract $2\frac{4}{5}$ and then add on $4\frac{2}{5}$ how much do you have?

If you start with 4 and subtract $2\frac{3}{7}$ and then add on $4\frac{6}{7}$ how much do you have?

James has 1 pizzas and Tim has 2 and $\frac{3}{5}$ pizzas. Between them they eat 1 and $\frac{4}{5}$ pizzas. How much do they have left?

$3\frac{3}{4} + t = 5\frac{1}{4}$

$6\frac{2}{4} - k = 4\frac{1}{4}$

Evaluate t + k. Write you answer in its simplest form

Long multiplication method (column) including decimals.

Work out: 5.8 x 4.4
Use an estimate to check that your answer is sensible (you should write down the values used to calculate your estimate).

The cost of petrol is 56.8 pence per litre. What is the cost of 43 litres? Give your answer in pounds, correct to the nearest penny.

What is the product of 9.6 and 65?
Use an estimate to check that your answer is sensible (you should write down the values used to calculate your estimate).

Calculate 45 lots of 12.1

A snooker player takes an average of 15.2 seconds per shot. If they have 135 shots, what is the total time they are at the table?

The cost of a phone charger is £7.97. How much would it cost for 18 chargers?

Evaluate 8.8 x 6.6. Use an estimate to check that your answer is sensible (you should write down the values used to calculate your estimate).

A company pays Google 13.5 pence every time a customer clicks through to their website. In a month, 450 customers click through. How much does the company owe? Given your answer in pounds.

How many seconds are there is 4.6 minutes?

Work out: 1.21 x 3.2

There are 2.5cm in an inch, 12 inches in a foot, and 3 feet in a yard. How many cm are there in 22 yards?

What is the product of 81 and 0.91?

Calculate 18 lots of 0.27

Electricity is measured using kilowatt hours (kWh). The cost for 1 kWh is 28.8 pence. What is the total cost of 98 kilowatt hours? Give your answer in pounds, correct to the nearest penny.

Shares in a business are valued at £2.36 each. How much is a shareholding of 76 shares worth?

Mark works out 34 x 0.81 to be 275.4. Use an estimate to check if Mark's answer is correct. If it is not, find the correct answer.

Use a mental method to work out 2.4 x 11. Write down the times table facts you used to answer the question.

Flags are put round the edge of a cricket pitch to mark out the boundary. They are spaced 4.3m apart and 22 flags are used in total. How far is it around the edge of the cricket pitch?

Use a mental method to work out 7.35 x 4. Write down the times table facts you used to answer the question.

$2 \times (-3)^2 - 4 \times (-8)$
$\dfrac{-3 + 1}{2} + 4$
$4 \times 6 - (-2)^2$
$1 - \dfrac{2}{7 - 5} + 4 \times \dfrac{4}{3 - 1}$
$2^2 - (-1)^2 \times 3$
$\dfrac{3 \times 8^2}{16 + 16} - \dfrac{5 \times 9}{3}$
$3 \times (-5)^2 - 8 \times (-5) + 3$
$\dfrac{48(7 - 1)}{6^2} - \dfrac{3^2 \times 8}{6 \times 2}$
$1 - \dfrac{12 \times 4}{16} - \dfrac{(-1) \times 9}{3}$
$(-5) \times (-3) - 5 \times 4 + 1^2$
Mr World is buying some cameras for his bird watching club. There is a special offer where he gets £50 off. If he buys 8 cameras at £129 each, write down a number sentence that would tell you the total cost (you don't need to work out the answer)

A plumber make a one-off call out charge of £45 and then £24 per hour. Write down a number sentence that would tell you the total cost for 9½ hours work (you don't need to work out the answer)

Chocolate mice come in two colours, brown and white. Elena buys 116 brown mice at 8p each, and 1751 white mice at 7 pence each. Write down a number sentence that would tell you the total cost of the mice **in pounds** (you don't need to work out the answer)

A taxi costs £3 plus £2 per mile. Write down a number sentence that would tell you the total cost of travelling 12 miles (you don't need to work out the answer)

Richard has bought some fence panels which are each 1.5 metres long. To make the fence, he cuts 0.2m from each panel, and then arranges 7 panels in a line. Write down a number sentence, that includes the number 1.5, 0.2 and 7, and that would tell you the total length of the fence (you don't need to work out the answer)

Units of electricity are 15p for the first 246 and 12p thereafter. uses 878 units. Write down a number sentence, that includes the numbers 15, 12, 246 and 878, and that would tell you the total costs in pence (you don't need to work out the answer)

A machine screws on bottle tops at a rate of 34 per minute. The bottles are then packed in trays of 24. Write a number sentence to work out the number of trays completed in 3 hours.

The average time of a Pulp song on one particular album is 3 minutes 45 seconds. A hidden track is added which lasts 8 minutes 30 seconds. If there were originally 11 tracks on the album, write a number sentence using all the numbers given to work out the new average time (you don't need to work out the answer).

The density of gold is 19.3g per cm^3. Write down a number sentence for calculating the mass of 7 gold coins each with a volume of $0.8cm^3$.

Marcus travels 55 miles at 30 miles per hour, and then a further 25 miles at 25 miles per hour. Write down a number sentence that would tell you the time taken (you don't need to work out the answer)

A factory has 1600 workers. On Friday, 7% were absent. How many workers were absent?

A stadium has 35000 seats. 4% of the seats are VIP seats. How many seats are not VIP seats?

An election had three candidates- Anna, Barry and Carlos. Anna received 12% of the vote, Barry received 38% of the vote and Carlos got the remainder. There were 9000 voters. By how many votes did Carlos win?

A shopkeeper buys a washing machine for £480. He wants to make a profit of at least 33%. What is the minimum price that he should charge?

A tablet has a retail price of £320. In a sale, there is a 19% discount on tablet. What is the saving if you buy three of these tablets?

A dish contains 2000 bacteria. The number of bacteria increases by 16% per hour. How many more bacteria are there in 1 hour?

Katy buys £300 worth of furniture. She receives a 23% discount. Calculate the cost after discount.

After a 14% discount, the cost of a laptop is £430. Calculate the saving made.

A pond loses 35% of its water. 195 litres of water remain. What is the total volume of the pond?

Paddy puts his money into an account that receives 4% interest per year. He receives £11.20 in interest after one year. What amount did he put into the account?

Poppy is browsing through a catalogue which has a 44% off sale. She notices a computer mouse that costs £2.80. What was the original cost of the mouse?

Lincoln has a population of 96000.This represents 15% of the total population of Lincolnshire. What is the total population of Lincolnshire?

Charles has 54 DVDs. This represents an 80% increase on the number of DVDs he had last month. How many DVDs has he bought in the past month?

Imogen buys a yacht and sells it for a 21% profit. The yacht cost £150000. What was her profit?

Tim plays football for Fulwood United. He is paid a salary of £840 per week. During negotiations for a new deal, he demands a pay increase of 42%. What will his new salary be?

Geoff builds a house on a piece of land that he bought for £40000. The total cost of building the house was £71500. He sells the property to make a profit of 64% on his total expenditure (money spent). What did he sell the house for?

Dave buys a settee from DFS for £80. This was after a discount of 84% in their Super Summer Sale. How much was the settee before the discount?

A population of seagulls increases by 27% every year. The initial was 10000. Bill says that after two years, the population will be 15400. Is Bill right? Explain your answer

Fran spends £300 on a haircut. She is offered a 41% discount. How much money will she save?

Dividing into a ratio problems

Sheffield United play Sheffield Wednesday. The total attendance is 20,700. The ratio of United fans to Wednesday fans is 7:2. How many United fans are at the match?

Mortar is made using 5 parts sand to 1 part cement. At a building site, there is 3.2 tonnes of cement and an unlimited supply of sand. How much mortar will they be able to make?

Jenny and Becky get pocket money in ratio 3:5. If Jenny gets £1.20 less than Becky, how much does Becky get?

Mike and Joel have salaries in the ratio 2:7. If Joel has a salary of £56,350, what is Mike's salary?
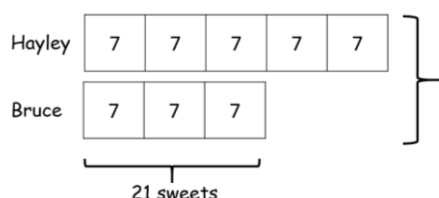
On a journey from Sheffield to Edinburgh, you go past Leeds. From Sheffield, the ratio of the distance to Leeds and distance to Edinburgh is 1:7. It is 35 miles to Leeds. What is the distance from Leeds to Edinburgh?

Ellie and Becca share some money in the ratio of 2:3. Draw a diagram to represent this. What fraction of the original amount does Ellie have?

Henry and Jonathan commentate on a cricket match. The ratio of their time on air is 3:4. If Henry is on air for 54 minutes, how long is Jonathan on for?

Hayley and Bruce have shared some sweets (see diagram). Fill in the missing gaps of this sentence:
Hayley and Bruce share ___ sweets in the ratio ___:___. Hayley gets ___ more sweets than Bruce.

| Hayley | 7 | 7 | 7 | 7 | 7 |
| Bruce | 7 | 7 | 7 | | |

21 sweets

Jen and Rick share £50 by a ratio. Jen gets £15. What ratio have they shared the money in?

Paul and Pat share 24 cans of coke. Pat gets 6 more than Paul. How much does Paul get?

153 house points are given to Ruth and Freddie in the ratio 2:1. How many do they get?

I shared an amount of money with Luke and Tyler in the ratio 2:3.
If Tyler gets £12, how much does Luke get?

Lemon cordial is mixed with water in the ratio 1:4 to make a drink. If I have 25ml of lemon cordial, how much drink can I make?

Three children aged 5, 6 and 9 share 80 sweets in the ratio of their ages. How much does the eldest get?

Ben and Sally share some money in the ratio 3:4. If Ben gets £18, how much does Sally get?

Tim gives some money to Matt and Emma to share in the ratio 3:7. If Emma gets £20 more than Matt, how much money did Tim give away?

Adam, Bob and Chris share £120. The ratio between Adam and Bob's money is 1:3.
Chris gets twice as much as Bob.
How much more than Adam does Bob get?

On a school trip, the ratio of adults to children is 1:7.
If 28 children are on the trip, how many people go altogether?

Adam and Joe share 60 sweets in the ratio 3:2.
How many more sweets does Adam get than Joe?

Use proportion to solve simple problems involving speed and currency.

Henry is going to the USA. £20 = \$31. How many dollars can Henry get with £75?
Jim wants to change £60 into Euros. He can choose from two exchange rates: Rate A - £10 = 14 Euros Rate B - £12 = 15.50 Euros Work out how much he's get with each rate.
You can get 288 Hong Kong Dollars with £24. How many HK Dollars could you get with £8?
If £3 is the same as €4.26, what is £5.50 in Euros?
40 US Dollars (\$) is the same as 36 Euros (€). Complete these conversions: \$10 = €___ \$1 = €___ \$7 = € ___
Pete drives from Norwich to Sheffield. The total distance is 200 miles and his average speed was 60 miles per hour. How long does it take Pete?
On a bike ride, Bradley rides at an average of 24miles per hour. If he rides for 2 ½ hours, what is his total distance?
During a plane journey the pilot says they're cruising at a speed of 720 km per hour. They stay at this speed for 2 hours and 20 mins. How far do they travel in this time?
A tortoise sets off on a 150 metre journey. It walks at an average speed of 1.5 meters per minute. How long will it take the tortoise to finish the journey?
A train has a 350 mile journey. It takes exactly 4 hours. What is the train's average speed in mile per hour?

Use knowledge of powers of 10 to calculate multiplications efficiently

Jane walks 15.6Km. How many metres is this?
A photocopy costs £0.10 – how much do 500 copies cost?
Write down the **value** of the **7** in the **answer** to: 473 x 10
Jacob is paid £10 an hour. In October he worked 27.5 hours. How much did he earn in October?
Fill in the missing number: 85 x ? = 8500
Fill in the missing number: ? x 1000 = 40
Fill in the missing number ? x 10 = 457.1
Write down the **value** of the digit **3** in the **answer** to: 931 x 100
Jeanna buys 300 sweets at £0.05 each. How much does she pay in total?
12.8 x 1000
A shop sells 0.5 litre bottles of water. One day they sell 1000 bottles. How many litres of water is that?

A shop sells bags of sweets which weigh 0.25kg. One day they sell 100 of these bags. How many kilograms of sweets is that?

Work out:
15×10^2

Work out:
23×10^3

Work out:
7.6×10^3

Work out
3.4×10^2

A car hire company charges £100 a day. Paula rents a car for 17.5 days. How much will it cost?

Exercise books cost £0.25 each. How much will 400 cost?

A shop sells bunting in 1.2m lengths. One day they sell 300 lengths.
How many metres is that?