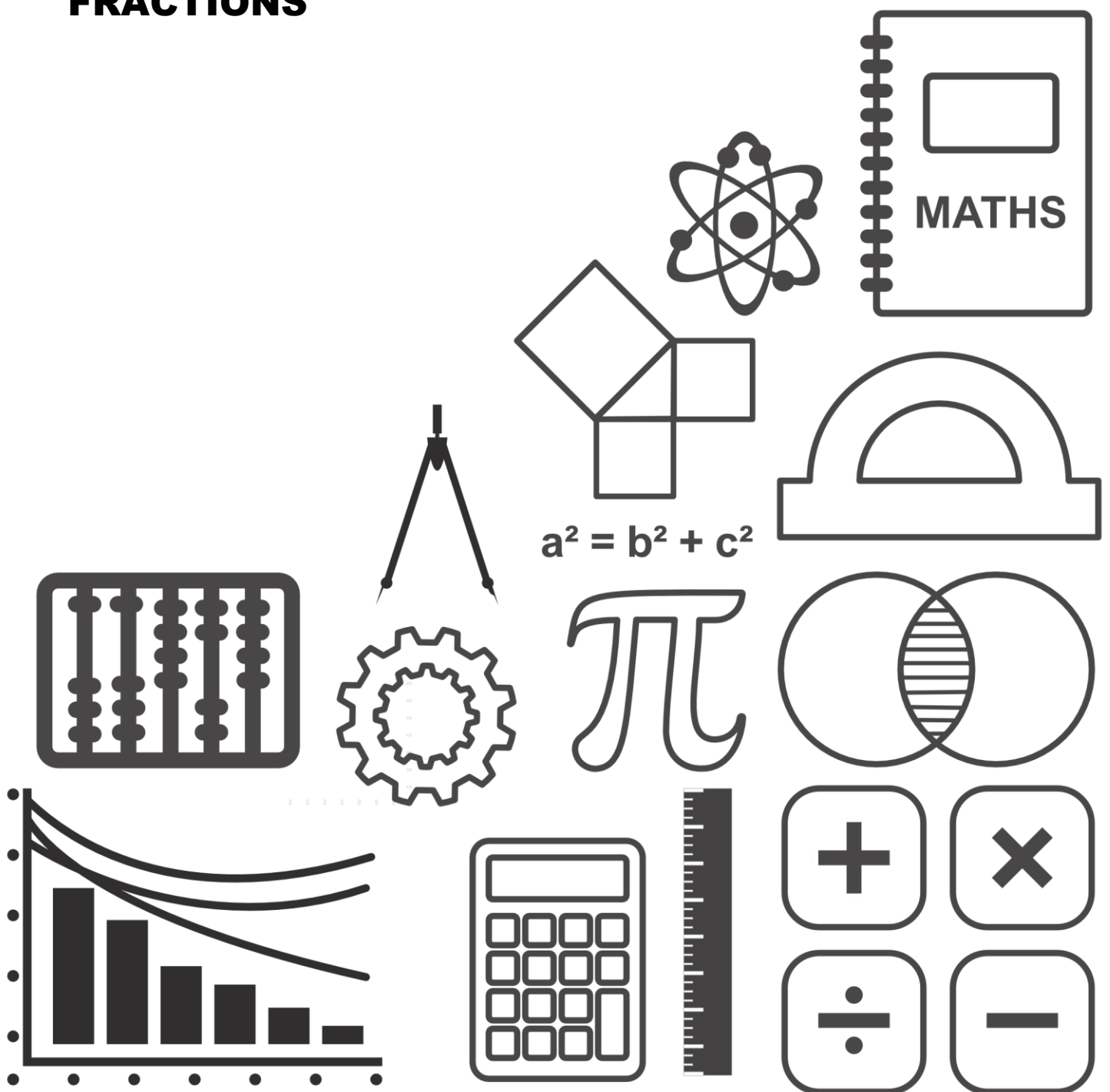


GCSE TOPIC BOOKLET FRACTIONS



1.

In a competition a player gains 1 point for a win, $\frac{1}{2}$ a point for a draw and no points for a loss. Each player plays 10 games.

Calculate the total number of points gained by a player who loses 2 games, draws 5 games and wins all the rest.

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[3]

2.

a) Karim painted a fence.

On Monday, he painted $\frac{7}{10}$ of the fence.

On Tuesday, he painted another $\frac{1}{5}$ of the fence.

On Wednesday, he finished painting the fence.

What fraction of the fence did Karim paint on Wednesday?

[3]

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b) Hanna earns £142 each week. She spends $\frac{2}{5}$ of this amount on food.

How much money does Hanna spend on food?

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[2]

- Show all your working.

[3]

(b) Write 40p as a fraction of £2 in its simplest form.

[2]

4.

All 34 of his other relatives live in Wales.

How many relatives does Idris have altogether?

[5]

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5.

Showing all your working, write $\frac{1}{2}$, $\frac{3}{8}$ and $\frac{3}{4}$ in ascending order.

[3]

6.

Maria sells ribbon.

She has a 400 cm length of ribbon.

Maria cuts off $\frac{3}{10}$ of this ribbon and sells this piece to a customer.

She uses $\frac{2}{5}$ of the **remaining** ribbon herself to decorate a card.

Then, Maria cuts the ribbon that is left over into three equal lengths.

What is the length of each of these three remaining pieces of ribbon?

[5]

The length of each remaining piece of ribbon is cm

They received 400 complaints in the first year.

How many complaints did the company receive in the third year?

[3]

8.

You must show all your working.

[3]

There are 390 girls in the school.

[3]

9.

(a)

Railcard for 16 to 25 year olds
£30 for a year
Get $\frac{1}{3}$ off all your rail travel

Nerys and Eleri are sisters.
Nerys is 22 years old and Eleri is 27 years old.

The two sisters live in Holyhead.
Their aunt lives in Milford Haven.
They travel by train to visit their aunt 3 times a year.

Nerys buys a 16-25 Railcard to use for these journeys.
They buy single rail tickets for each journey.
The cost of a **single** rail ticket from Holyhead to Milford Haven is £84.50.
The journey home from Milford Haven also costs £84.50 per ticket.

In a year, how much less does Nerys pay than Eleri for the journeys to Milford Haven and back?
You must show all your working. [5]

[illegible]

(b) Cristiano is 22 years old.
He sometimes travels from Rhyl to Llandudno Junction by train.
The cost of a single rail ticket from Rhyl to Llandudno Junction is £7.80.

Nerys advises Cristiano to buy a Railcard. Cristiano says,

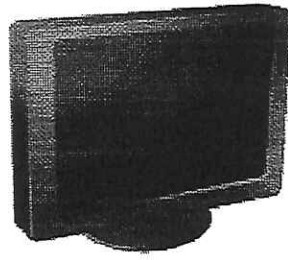
It is not worth paying £30 for the Railcard.

How many times in a year would Cristiano have to travel to make it worthwhile for him to buy a Railcard? [3]

[The following section contains several horizontal dashed lines.]

10.

a)



In a sale, Ailsa saw a television which she wanted to buy.
Its original cost was £450.

Then it was reduced by $\frac{2}{5}$ of this cost.

How much did Ailsa pay for the television in the sale?

[3]

b)

Each week Sally earns £325.

She saves $\frac{2}{5}$ of this amount.

How much does Sally save each week?

[2]

c)

Chris has £600 to spend.

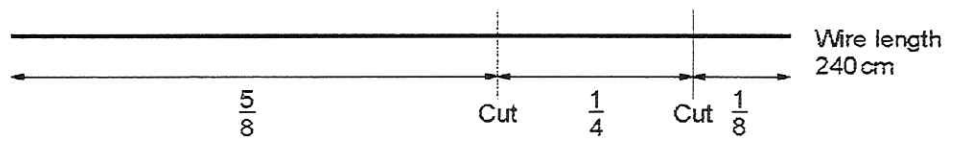
He spends $\frac{1}{4}$ of his £600 on a DVD player and $\frac{1}{3}$ of the £600 on a bicycle.

What fraction of his £600 has he got left?

[4]

11.

- (a) A length of wire measuring 240 cm is to be cut into 3 pieces as shown in the diagram.



Calculate the length of each of the 3 pieces of wire.

[2]

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(b)

Find $\frac{2}{7}$ of 63.

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(c)

Find $\frac{3}{7}$ of 28.

[2]

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[2]

12.

- (a) Evaluate $\frac{5}{10} + \frac{8}{10}$.

Write your answer as a mixed number.

[2]

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- (b) Write 15 seconds as a fraction of 1 minute in its simplest form.

[2]

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You will be assessed on the quality of your written communication in this question.

Each day, Sion uses $\frac{3}{5}$ of a 1 litre carton of long life milk.

He buys 1 litre cartons of long life milk on the Saturday of each week.

He always buys the least number of 1 litre cartons so that he has enough milk to last him for the next seven days.

On a particular Saturday Sion had no long life milk at all in the house.

Calculate the least number of 1 litre cartons he should buy

- (i) on the Saturday and (ii) on the following Saturday.

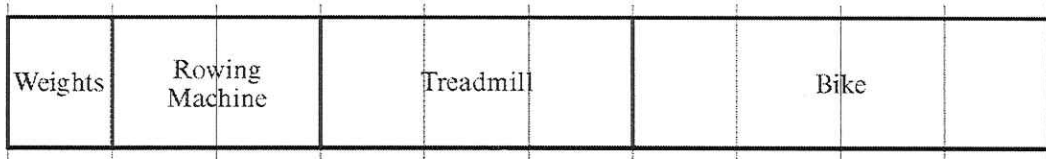
You must show all your working.

[8]

[illegible]

14.

On Monday, Gary went to the gym and worked out on four machines.
The fraction of the time he spent on each machine is represented in the diagram below.



(a) What fraction of the total time was Gary on the bike?

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[2]

(b) Gary spent 24 minutes on the treadmill.
How long did Gary spend in the gym on Monday?

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[4]

15.

David has £600.
He spends some of the £600 on rent and food. His rent is $\frac{1}{4}$ of the £600 and his food is $\frac{1}{5}$ of the £600.
What fraction of the £600 remains? Your fraction must be given in its lowest terms.

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[4]

16.

- (a) Showing all your working, write $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$ in order, starting with the largest. [3]

- (b) Write down 50p as a fraction of £4 in its simplest form. [2]

17.

Ivan, Dylan and Joe live in the same building.
The front of the building needs painting and the three men share the cost between them.

Ivan pays $\frac{1}{4}$ of the cost and Dylan pays $\frac{1}{8}$ of the cost.

Joe pays £100 which is the rest of the cost.

What is the total cost of painting the front of the building? [4]

You will be assessed on the quality of your written communication in this question.

A shop sells oranges in packs of 8 at a price of £1.44.
A special offer is advertised as two packs for £2.40.

Emyr bought two packs using the special offer.

Emyr had to throw away $\frac{1}{4}$ of the oranges he bought because they became mouldy before he had time to eat them.

Calculate the price per orange

- (i) when buying a single pack,
- (ii) when buying two packs at the special offer,
- (iii) for the oranges that Emyr actually used.

Comment on whether Emyr was wise to use the special offer. You must show all your working.

[7]

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