

Edexcel GCSE

Mathematics (Linear) – 1MA0

FRACTIONS

Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers

Nil

Instructions

Use black ink or ball-point pen.

Fill in the boxes at the top of this page with your name, centre number and candidate number.

Answer all questions.

Answer the questions in the spaces provided – there may be more space than you need.

Calculators may be used.

Information

The marks for each question are shown in brackets – use this as a guide as to how much time to spend on **each** question.

Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

Advice

Read each question carefully before you start to answer it.

Keep an eye on the time.

Try to answer every question.

Check your answers if you have time at the end.

1. A school has 1200 pupils.
575 of these pupils are girls.

$\frac{2}{5}$ of the girls like sport.

$\frac{3}{5}$ of the boys like sport.

Work out the total number of pupils in the school who like sport.

$$\begin{array}{l} 1200 \text{ pupils} \\ \swarrow \quad \searrow \\ 575 \text{ girls} \quad 1200 - 575 = 625 \text{ boys} \end{array}$$

$$\frac{2}{5} \times 575 = 230$$

$$\frac{3}{5} \times 625 = 375$$

$$230 + 375 = 605$$

605

.....
(Total 3 marks)

2. A train travels from London to Manchester.

It leaves London at 16 55

It arrives in Manchester at 19 45

(a) Work out the number of minutes this train takes to travel from London to Manchester.

$$\begin{array}{r} 50 \text{ mins to } 1745 \\ + 120 \text{ mins to } 1945 \\ \hline 170 \end{array}$$

(3)

There are 800 people on the train at Manchester.

$\frac{1}{10}$ of these 800 people are children.

(b) (i) Work out $\frac{1}{10}$ of 800

$$\begin{array}{r} 80 \\ \hline \end{array}$$

$\frac{3}{8}$ of those 800 people are women.

(ii) Work out $\frac{3}{8}$ of 800

$$\frac{1}{8} = 100$$

$$\begin{array}{r} 300 \\ \hline \end{array}$$

The rest of the 800 people are men.

(iii) Work out the number of men on the train.

$$800 - 380$$

$$\begin{array}{r} 420 \\ \hline \end{array}$$

(4)

320 of the 800 people are under 21 years old.

(c) Work out 320 out of 800 as a percentage.

$$\frac{320}{800} \times 100$$

$$\begin{array}{r} 40 \\ \hline \end{array} \%$$

(2)

(Total 9 marks)

3. Danny shares a bag of 20 sweets with his friends.

He gives Mary $\frac{3}{5}$ of the sweets. $\frac{1}{5} = 4$ $\frac{3}{5} = 12$

He gives Ann $\frac{1}{10}$ of the sweets. 2

He keeps the rest for himself.

How many sweets does Danny keep for himself?

$$20 - 14 = 6$$

6

.....
(Total 3 marks)

4. A class has 29 students.
16 of the students are girls.

What fraction of the students are boys?

16 girls

$$29 - 16 = 13 \text{ boys}$$

13 out of 29

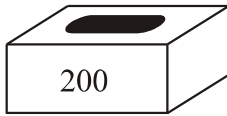
$\frac{13}{29}$

.....
(Total 2 marks)

5. A box contains 200 tissues.

Toby takes $\frac{3}{5}$ of these tissues.

$$\frac{1}{5} = 40$$



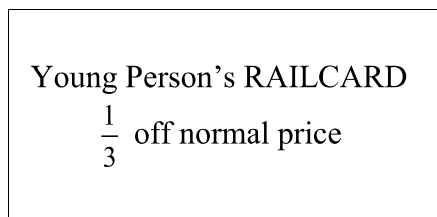
Work out how many tissues he takes.

$$\frac{3}{5} \times 200$$

120

(Total 2 marks)

6.



Lisa uses her railcard to buy a ticket.

She gets $\frac{1}{3}$ off the normal price of the ticket.

The normal price of the ticket is £24.90

Work out how much Lisa pays for the ticket.

$$\frac{1}{3} \times 24.90 = \cancel{£}8.30$$

$$\begin{array}{r} 24.90 \\ - 8.30 \\ \hline 16.60 \end{array}$$

£ 16.60

(Total 3 marks)

7. There are 30 students in a class.
20 of these students are female.

Find the fraction of the class that is female.
Give your answer in its simplest form.

$$\frac{20}{30} = \frac{2}{3}$$

$$\frac{2}{3}$$

(Total 2 marks)

8. In a shop the normal price of a jacket is £60
The cost of the jacket in a sale is $\frac{3}{4}$ of the normal price.

- (a) Work out $\frac{3}{4}$ of £60

$$\frac{1}{4} = \pounds 15$$
$$\frac{3}{4} = \pounds 45$$

$$\pounds 45$$

(2)

Darren has to travel $\frac{1}{8}$ mile to the shop.

- (b) Write $\frac{1}{8}$ as a decimal.

$$1 \div 8 = 0.125$$

$$0.125$$

(2)

(Total 4 marks)

9. (a) Work out $\frac{1}{4}$ of £24

£6
.....
(1)

- (b) Work out 10% of 400 kg.

40 kg
.....
(1)

(Total 3 marks)

10. There are 24 men in a room.

$\frac{1}{2}$ of the men are wearing a red shirt. 12

$\frac{1}{3}$ of the men are wearing a green shirt. 8

The rest of the men are wearing a blue shirt.

Work out the number of men wearing a blue shirt.

$$24 - 20$$

4
.....
(Total 3 marks)