EXAM PAPERS PRACTICE

GCSE Edexcel Maths 1MA1

Arithmetic

Answers

"We will help you to achieve A Star "

Answer 1

Here is part of Gary's electricity bill. .

Electricity bill	
New reading	7155 units
Old reading	7095 units
Price per unit	15p

Work out how much Gary has to pay for the units of electricity he used.

ELECTRICITY USED = NEW READING − OLD READING

= 7155 − 7095

= 60 UNITS

7155
7095 −
60

COST = 60 × 15

= 60 × 10 + 60 × 5

= 600 + 300

(Total for Question is 4 marks)

= 900 pence

= £9

Answer 2

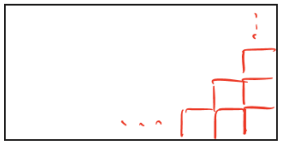
(b) 331 705 ÷ 1.85

$\frac{300000}{2} = 150000$

$\frac{331705}{1.85} = 179300$

Answer 3

The diagram shows a patio in the shape of a rectangle.



5 slabs

Diagram **NOT** accurately drawn

6 slabs

The patio is 3.6 m long and 3 m wide.

Matthew is going to cover the patio with paving slabs.
Each paving slab is a square of side 60 cm.

Matthew buys 32 of the paving slabs.

(a) Does Matthew buy enough paving slabs to cover the patio?
You must show all your working.

1 metre = 100 cm

3 metres = 300 cm

3.6 metres = 360 cm

$\frac{300}{60} = 5$

$\frac{360}{60} = 6$

Matthew needs

$5 \times 6 = 30$ slabs

So he has enough

Answer 4

Use the fact that

$5.4 \times 36 = 194.4$ ⟶ $54 \times 36 = 1944$

to find the value of

(i) 5.4×3.6

$5.4 \times 3.6 = 19.44$

(ii) 54×360

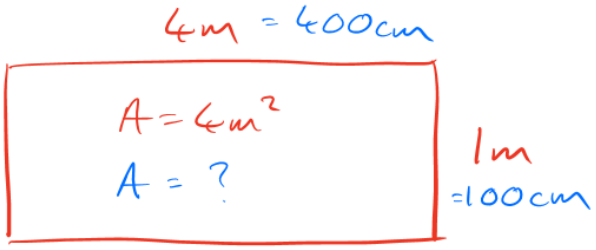
$54 \times 36 \times 10 = 1944 \times 10$

$= 19440$

Answer 5

A rectangle has an area of 4 m^2.

Write this area in cm^2.



AREA = 100 × 400

= 40000 cm^2

Answer 6

Given that $1793 \times 185 = 331\,705$

write down the value of

(a) 1.793×185

3DP

$1793 \times 185 = 331.705$

331.705

Answer 7

Write down the reciprocal of 5

$\frac{1}{5}$

RECIPROCAL OF a IS $\frac{1}{a}$

RECIPROCAL OF $\frac{a}{b}$ IS $\frac{b}{a}$

(1)

INDICES

$a^{-p} = \frac{1}{a^p}$

(1)

$a^p \times a^q = a^{p+q}$

Answer 8

One sheet of paper is 9×10^{-3} cm thick.

Mark wants to put 500 sheets of paper into the paper tray of his printer.
The paper tray is 4 cm deep.

Is the paper tray deep enough for 500 sheets of paper?
You must explain your answer.

THICKNESS OF 500 SHEETS:

$T = 500 \times 9 \times 10^{-3}$

$= 4500 \times 10^{-3}$ MOVE DEC. PT. 3 TO LEFT

$= 4.5$ cm

500 SHEETS IS TOO MANY

SO NO IT'S NOT DEEP ENOUGH.

$T = 4500 \times 10^{-3}$

$T = 4500 \times \frac{1}{1000}$

$= \frac{4500}{1000}$

$= 4.5$ cm

$10^{-3} = \frac{1}{10^3}$

$= \frac{1}{1000}$

Answer 9

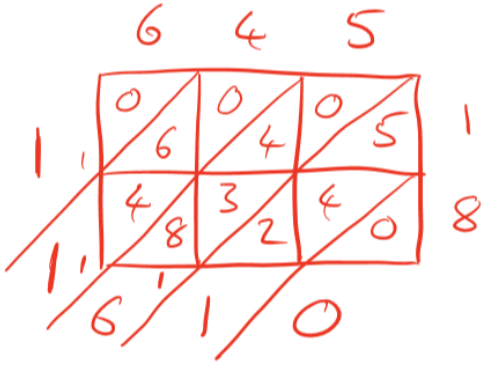
Train tickets
day return £6.45
monthly saver £98.50

Sue goes to work by train.

Sue worked for 18 days last month.
She bought a day return ticket each day she worked.

A monthly saver ticket is cheaper than 18 day return tickets.
How much cheaper?

SUE PAID $18 \times £6.45$



$18 \times 6.45 = 116.10$

DIFFERENCE $= 116.10 - 98.50$

(SUBTRACT £100 THEN ADD £1.50)

$= 116.10 - 100 + 1.50$

$= 16.10 + 1.50$

$= £17.60$

Answer 10

Yesterday it took 5 cleaners $4\frac{1}{2}$ hours to clean all the rooms in a hotel.

There are only 3 cleaners to clean all the rooms in the hotel today.

Each cleaner is paid £8.20 for each hour or part of an hour they work.

How much will each cleaner be paid today?

YESTERDAY

TOTAL TIME CLEANING = 5×4.5

$= 22.5$ HOURS

TODAY

EACH CLEANER = $\frac{22.5}{3}$

$= 7.5$ HOURS

↓

"8 HOURS PAY"

PAY PER CLEANER = 8×8.20

$= £65.60$

Answer 11

One sheet of A3 card has area $\frac{1}{8}$ m^2.

The card has a mass of 160 g per m^2.

Work out the total mass of 25 sheets of A3 card.

TOTAL MASS = 25 × MASS OF 1 SHEET

$= 25 \times \frac{1}{8} \times 160$

$= 25 \times \frac{1}{8} \times 8 \times 2 \times 10$

$= 50 \times 10$

$= 500$g

Answer 12

Each day a company posts some small letters and some large letters.

The company posts all the letters by first class post.

The tables show information about the cost of sending a small letter by first class post and the cost of sending a large letter by first class post.

Small Letter

Weight	First Class Post
0–100 g	~~60p~~ £0.60

Large Letter

Weight	First Class Post
0–100 g	£1.00
101–250 g	£1.50
~~251–500 g~~	~~£1.70~~
~~501–750 g~~	~~£2.50~~

One day the company wants to post 200 letters.

The ratio of the number of small letters to the number of large letters is 3:2

70% of the large letters weigh 0–100 g.

The rest of the large letters weigh 101–250 g.

Work out the total cost of posting the 200 letters by first class post.

S : L TOTAL

3 : 2 ⟷ 5 (×40)

120 : 80 ⟷ 200

70% of 80 = $\frac{70}{100} \times 80 = 56$

TOTAL COST = 120 × 0.60 + 56 × 1.00 + 24 × 1.50

= 72 + 56 + 36

= 128 + 36

= 150 + 14

= £164

Answer 13

Henry is thinking of having a water meter.

These are the two ways he can pay for the water he uses.

Water Meter	No Water Meter
A charge of £28.20 per year **plus** 91.22p for every cubic metre of water used 1 cubic metre = 1000 litres	A charge of £107 per year

£0.9122

Henry uses an average of 180 litres of water each day.

365 DAYS IN A YEAR

Use this information to determine whether or not Henry should have a water meter.

HENRY USES = $\frac{180 \times 365}{1000}$ = $\frac{65700}{1000}$ LITRES/YR

= 65.7 CUBIC METRES/YR

COST OF WATER METER

= 28.20 + 0.9122 × 65.7

= £88.13

HENRY SHOULD HAVE A WATER METER AS £88.13 < £107

Answer 14

Saphia is organising a conference.
People at the conference will sit at circular tables.

Diagram **NOT** accurately drawn

Each table has a diameter of 140 cm.
Each person needs 60 cm around the circumference of the table.

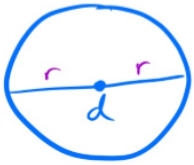
There are 12 of these tables in the conference room.
A total of 90 people will be at the conference.

Are there enough tables in the conference room?

CIRCLE

CIRCUMFERENCE

$C = \pi d \ (= 2\pi r)$



ONE TABLE $C = \pi \times 140$

$\simeq 439\ldots$

NO OF PEOPS $= \frac{439\ldots}{60}$

$= 7.33$

$=$ 7 PEOPS/TABLE.

TWELVE TABLES

NO OF PEOPS $= 7 \times 12$

$=$ 84 PEOPLE

SINCE $84 < 90$ THERE ARE NOT ENOUGH TABLES

Answer 15

The diagram shows a plan of Brian's lawn.

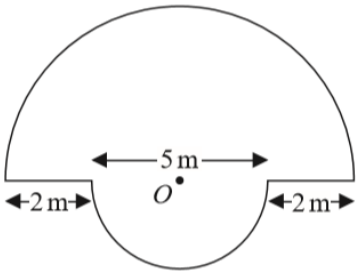


Diagram **NOT** accurately drawn

The edge of the lawn consists of two semicircles and two straight lines.
Each semicircle has centre O.
The diameters of the semicircles are 9 m and 5 m.

Brian is going to put lawn edging around the edge of the lawn.
Lawn edging is sold in 2.4 metre rolls.

Brian has £35

Has Brian got enough money to buy all the rolls of lawn edging he needs?
You must show all your working.

Lawn edging
£3.99 per roll or 3 rolls for £10

$P = \frac{1}{2} \times \pi \times 9 + \frac{1}{2} \times \pi \times 5 + 2 \times 2$

$P = 25.99\text{m}$

CIRCLE

CIRCUMFERENCE

$C = \pi d \ (= 2\pi r)$

$\text{No OF ROLLS} = \frac{25.99}{2.4} = 10.8 \text{ ROLLS} \Rightarrow 11 \text{ ROLLS}$

$\text{COST} = 3 \times £10 + 2 \times £3.99$ (OR ~~$4 \times £10$~~)

$= £37.98$ (OR ~~£40~~)

BRIAN DOES NOT HAVE ENOUGH MONEY

AS $37.98 > 35$.