Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. Change 7800 grams into kilograms.

7.8 .....kilograms

(Total 1 mark)

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2. Write 0.07 as a percentage

7 .....%

(Total 1 mark)

---

3. Write 7.8365 correct to 2 decimal places.

7.84 .....

(Total 1 mark)

---

4. Work out $(-5)^2$

-5×-5

$= 25$

25 .....

(Total 1 mark)

---

6. Here are four digits.

8 2 4 3

(*a*) (i) Use two of these digits to make the smallest possible two-digit number.

23

(ii) Use three of these digits to make the three-digit number closest to 300.

284, 324

closer to 300

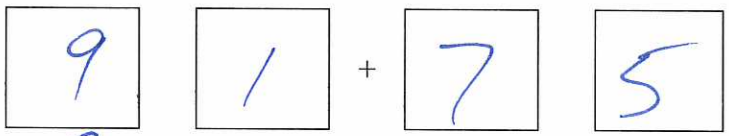
284

(2)

Here are four different digits.

5 1 7 9

(*b*) (i) Put one digit in each box to make the largest total.
You may only use each digit once.



or 9 5 + 7 1

(ii) Write down the total.

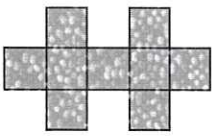
166

(2)

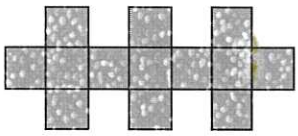
(Total 4 marks)

8. Here are some patterns made from squares.

Pattern number 1

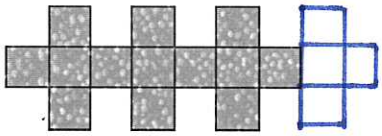


Pattern number 2



Pattern number 3

(a) The diagram below shows part of Pattern number 4
Complete the diagram for Pattern number 4



Pattern number 4

(1)

(b) Complete the table.

Pattern number x	1	2	3	4	5
Number of squares	5	9	13	17	21

$4x+1$

(1)

(c) Find the number of squares used for Pattern number 10

$4(10)+1 = 41$

41

(1)

(Total 3 marks)

---

9. Two numbers are added together.
The answer is 15

Both the numbers are factors of 24

What are the two numbers?

Factors of 24

1 x 24
2 x 12
3 x 8
4 x 6

3 and 12

(Total 2 marks)

---

12. Here is a bus timetable from a Park and Ride car park to a town centre.

Car park	Town centre
0740	0752
0800	0812
0815	0827
then every 15 minutes until	
1815	1827

Sadia gets to the car park at 0745.
She catches the next bus to the town centre.

(*a*) What time should the bus get to the town centre?

0812

(1)

Here is the bus timetable from the town centre to the car park.

Town centre	Car park
0803	0815
0835	0847
0902	0914
0920	0932
then every 15 minutes until	
1920	1932

0935
0950

(*b*) How many buses go from the town centre to the car park between 0800 and 1000?

6

(2)

Paul wants to leave the town centre after 1730.
He is going to catch a bus to the car park.

(*c*) What is the time of the first bus Paul can catch from the town centre after 1730?

Buses leaving every 15 mins
∴ every 20, 35, 50, 05 minute of the hour.

1735

(1)

(Total 4 marks)

13. A charity made an appeal for money.

The charity put the information shown below on a poster.

> **Hunger appeal**
>
> - £3 will buy 5 meals for one person.
> - £100 will buy lunches for 80 school children for 5 days.

£3 will buy 5 meals for one person.

(*a*) Work out the cost of one of the meals.
Give your answer in pence.

£3.00 = 300p

$\frac{300}{5}$

60 ..... p

(2)

£100 will buy lunches for 80 school children for 5 days.

(*b*) Work out the cost of buying lunch for one school child for one day.

80 students x 5 days
= 400 meals

$\frac{£100}{400} = £0.25$

£0.25 or 25p .....

(3)

(Total 5 marks)

10% of 52.50
= 5.25

16. Tom is going to buy 25 plants to make a hedge.

20% = 5.25 x 2 = 10.50

Here is information about the cost of buying the plants.

Kirsty's Plants
£2.39 each

Hedge World
Pack of 25
£52.50 plus VAT at 20%

52.50 + 10.50
= 63.00

Tom wants to buy the 25 plants as cheaply as possible.

Should Tom buy the plants from Kirsty's Plants or from Hedge World?
You must show all your working.

OR

Kirsty's Plants

239p x 25.

$$\begin{array}{r} {}^{1}{}^{14}239 \\ \times\ 25 \\ \hline 11'95 \\ +\ 4780 \\ \hline 5975p \end{array}$$

or

£59.75

Hedge World

5250 + 20%.
= 5250 x 1.2

$$\begin{array}{r} 5'250. \\ \times\ \ 1.2 \\ \hline 10'50.0 \\ +\ 5250 \\ \hline 6300p \end{array}$$

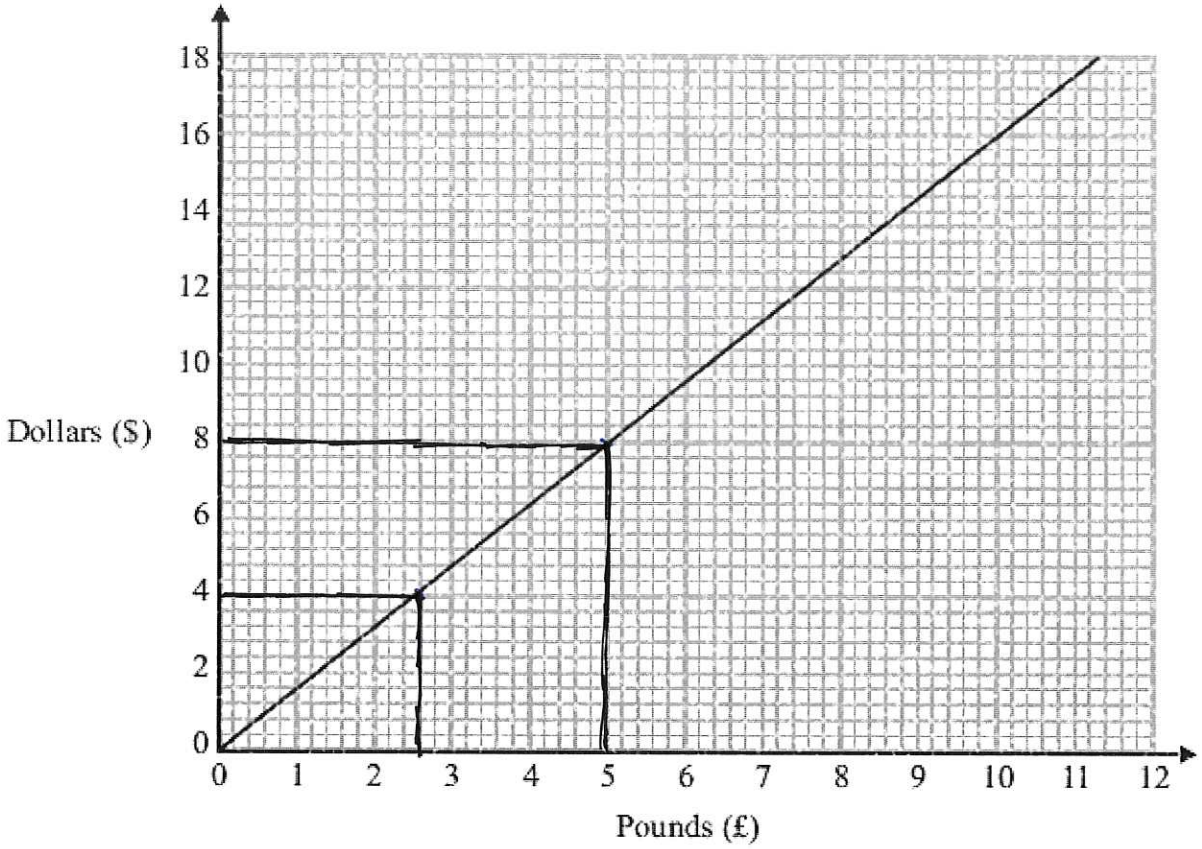
or

£63.00

Tom should buy from Kirsty's Plants.

(Total 5 marks)

17. You can use this conversion graph to change between pounds (£) and dollars ($).



(a) Use the conversion graph to change £5 to dollars.

$ 8

(1)

Ella has $200 and £800
Her hotel bill is $600

Ella pays the bill with the $200 and some of the pounds.

(b) Use the conversion graph to work out how many pounds she has left.

$600 - $200 = $400

$4 = £2.50

∴ $400 = £250

$800 - 250

= £550

£ 550

(4)

(Total 5 marks)

speed = distance / time = 90 / 1.5 = 60 mph

19. Dylan is driving from London to Newcastle.
He will drive a total distance of 240 miles.

Dylan leaves London at 09:30

It takes him $1\frac{1}{2}$ hours to travel the first 90 miles.

240 miles / 60 mph = 4 hours

(a) Use this information to estimate the time Dylan will arrive in Newcastle.
You must show how you get your answer.

1½ hrs = 90 miles
∴ 90 mins = 90 miles
Traveling 1 mile per min.
∴ 240 miles = 240 mins.
240 mins = 4 hrs

09:30 + 4 hrs = 13:30

1330 or 1.30pm

(3)

(b) Write down **one** assumption you made in your answer to part (a).
If your assumption is wrong, how would this affect your answer to part (a)?

Assumed that speed is constant and no stops were made. Could arrive earlier or later depending on these variables. **(1)**

(Total 4 marks)

21.

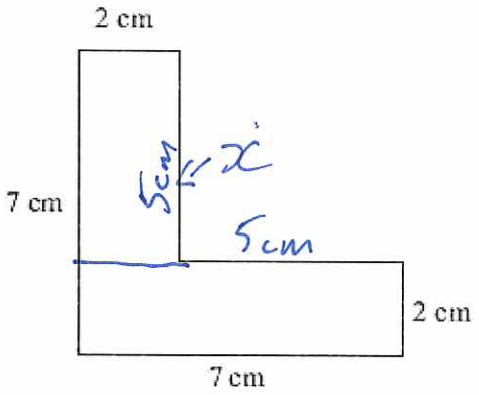


Diagram **NOT** accurately drawn

The diagram shows the cross-section of a solid prism.
The length of the prism is 2 m.

The prism is made from metal.
The density of the metal is 8 grams per cm^3.

Work out the mass of the prism.

$x = 7cm - 2cm$

$= 5cm$

$A = 2 \times 5 + 2 \times 7$

$= 10 + 14$

$= 24cm^2$ ← cross-section

$V = 24 \times 200cm$

$= 4800cm^3$

$Mass = 8 \times 4800$

$= 38,400$ grams

38,400g or 38.4kg

.....

(Total 5 marks)

23. Ramesh throws a biased coin.
The probability that the coin will land on a Head is 0.37

(a) Write down the probability that the coin will land on a Tail.

$1 - 0.37 = 0.63$

0.63

(1)

Ramesh is going to throw the coin 500 times.

(b) Work out an estimate for the number of times that the coin will land on a Head.

500×0.37

35.00

$+ 150.0$

OR

37×5

185

185 times

(2)

(Total 3 marks)

---

24. Arwen buys a car for £4000
The value of the car depreciates by 10% each year.

Work out the value of the car after two years.

$4000 - 10\%$

$10\% = \frac{4000}{10}$

$= 400$

$4000 - 400$

$= 3600 - 10\%$

$10\% = \frac{3600}{10}$

$= 360$

$3600 - 360$

$= 3240$

£ 3240

(Total 3 marks)
