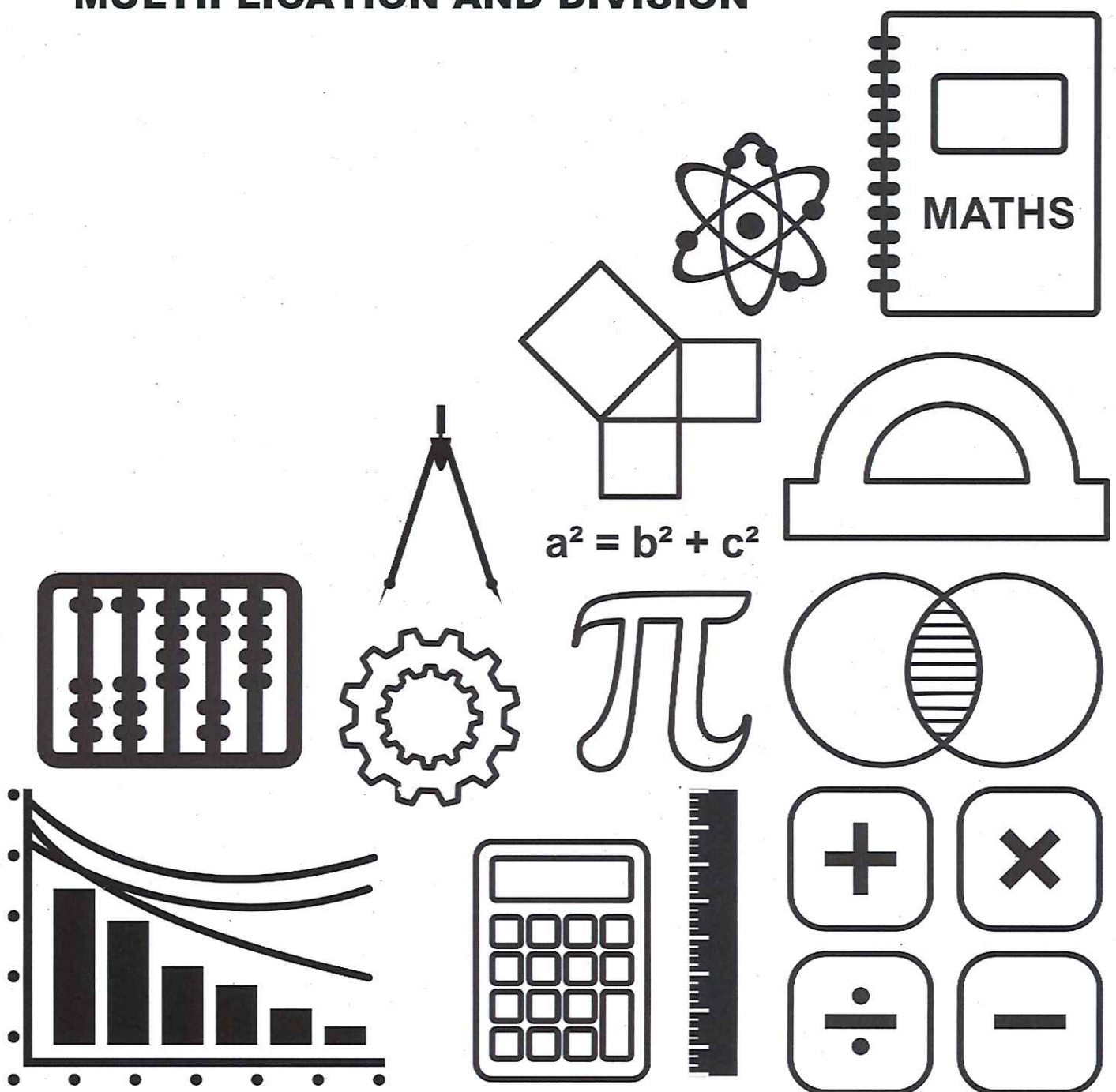


MATHSDIY

GCSE TOPIC BOOKLET

SOLUTIONS

MULTIPLICATION AND DIVISION



1. Multiply 469 by 36.

$$\begin{array}{r}
 469 \\
 \times 36 \\
 \hline
 2814 \\
 14050 \\
 \hline
 16884
 \end{array}$$

(3)

2. Divide 989 by 43.

$$\begin{array}{r}
 23 \\
 43 \overline{) 989} \\
 \underline{86} \\
 129
 \end{array}$$

(3)

3. Multiply 346 by 27.

$$\begin{array}{r}
 346 \\
 \times 27 \\
 \hline
 2422 \\
 6980 \\
 \hline
 9342
 \end{array}$$

(3)

4. Divide 918 by 34.

$$\begin{array}{r}
 27 \\
 34 \overline{) 918} \\
 \underline{68} \\
 238 \\
 \underline{204} \\
 34
 \end{array}$$

(3)

5. Divide 2030 by 58.

$$\begin{array}{r}
 35 \\
 58 \overline{) 2030} \\
 \underline{174} \\
 290
 \end{array}$$

(3)

6. A toy company buys 327 packets of marbles. Each packet contains 35 marbles. Calculate the total number of marbles bought by the company?

$$\begin{array}{r}
 327 \\
 \times 35 \\
 \hline
 1635 \\
 + 9810 \\
 \hline
 11445
 \end{array}$$

11,445

(3)

7. Six hundred apples are placed in boxes for storage. Each box contains thirty-four apples. How many boxes can be filled and how many apples are left over?

$$\begin{array}{r}
 17 \text{ r } 22 \\
 34 \overline{) 600} \\
 \underline{68} \\
 20 \\
 \underline{204} \\
 238 \\
 \underline{272} \\
 22
 \end{array}$$

17 full boxes

and

22 left over

(4)

8. Morgan operates a machine that packs bottles of water into boxes. He has 200 bottles of water to pack into identical boxes. Each box holds 12 bottles. He completely fills as many boxes as possible. How many boxes will he fill and how many bottles will be left over?

$$\begin{array}{r}
 16 \text{ r } 8 \\
 12 \overline{) 200} \\
 \underline{192} \\
 8
 \end{array}$$

16 boxes will be filled

and eight bottles left over.

(4)

9. There are 204 students at a certain primary school. The caretaker always puts 15 chairs in each row in the school hall.

- How many complete rows of chairs must he put out so that each student can sit on a chair?

- How many empty chairs will there be?

$$\begin{array}{r}
 13 \text{ r } 9 \\
 15 \overline{) 204} \\
 \underline{150} \\
 54 \\
 \underline{45} \\
 9
 \end{array}$$

13 full rows and 9 students in the 14th row

But, caretaker put out full rows. 14 rows with 6 spare chairs

Number of complete rows of chairs = 14

Number of empty chairs = 6

(5)

10. A box contains 879 marbles. The marbles are shared equally between 24 children.

- How many marbles are given to each child?

- How many are left over?

$$\begin{array}{r}
 36 \text{ r } 15 \\
 24 \overline{) 879} \\
 \underline{48} \\
 72 \\
 \underline{96} \\
 120 \\
 \underline{144} \\
 15
 \end{array}$$

36 each

15 left over

Each child is given 36 marbles.

There are 15 marbles left over.

(4)

11. A college invests in some new chairs. 1050 new chairs are divided equally between the 37 teaching rooms.

- How many chairs are placed in each room?
- How many are left over?

$$\begin{array}{r}
 28 \overline{) 1050} \\
 \underline{74} \\
 310 \\
 \underline{296} \\
 14
 \end{array}$$

$$\begin{array}{r}
 37 \overline{) 1050} \\
 \underline{74} \\
 310 \\
 \underline{296} \\
 14
 \end{array}$$

Each room is given 28 chairs.

There are 14 chairs left over.

(4)

12. Callum has £15 to spend on biscuits. A packet of biscuits costs 89p. He buys as many packets as possible. How many packets of biscuits does he buy and how much change does he receive? Show all of your working

Try a sensible guess

$$\begin{array}{r}
 10 \text{ packets} = £8.90 \\
 5 \text{ packets} = £4.45 \\
 \hline
 13.35
 \end{array}$$

$$\begin{array}{r}
 13.35 \\
 + 0.89 \\
 \hline
 14.24
 \end{array}$$

the total gives 16 packets

£14.24 buys 16 packets

and 76p change

(6)

13. Sian worked out that she would need to order 10 coaches to take 312 people to the theatre. Each coach holds 53 people. Is Sian correct or incorrect? Explain your answer.

$$10 \times 53 = 530 \text{ people}$$

Sian is incorrect. 10 coaches would hold 530 people. She has ordered too many.

(2)

14. Mr Jones is organising a school trip, travelling by bus. Each bus can carry 50 passengers. There will be 240 students going on the trip. For every 15 students, there must be one adult. How many buses will Mr Jones need to book? You must show all of your working.

First do $240 \div 15$ to see how many adults are needed

$$\begin{array}{r} 16 \\ 15 \overline{) 240} \end{array}$$

16 adults

$\therefore$ 256 passengers altogether

$$5 \text{ coaches} = 5 \times 50 = 250$$

$$6 \text{ coaches} = 6 \times 50 = 300$$

Mr Jones must book 6 coaches

(6)

15. Andres is planning a party and needs to buy some balloons. Two different companies offer the same type of balloon for sale.

PARTY PLAN
Balloons 25p each
Buy 8 and get 2 EXTRA free!

BRIGHT BALLOONS
Packs of 24 balloons
Only £4.95 a pack!

Andres needs to buy 120 balloons.

Which company offers the cheaper price for 120 balloons and by how much?

Party Plan

$$\begin{array}{r} \text{Buy } 8 = 25 \\ \times 8 \\ \hline 200 \\ 4 \end{array} = \text{£2} \text{ get 2 free}$$

$$10 \text{ balloons} = \text{£2}$$

$$\underline{120 \text{ balloons}} = 12 \times \text{£2} = \underline{\text{£24}}$$

Bright balloons

$$24 = \text{£4.95}$$

$$120 = 5 \times 24 = 5 \times \text{£4.95}$$

120 balloons

$$\begin{array}{r} 4.95 \\ \times 5 \\ \hline 24.75 \\ 4 \quad 2 \end{array}$$

$$\underline{\underline{\text{£24.75}}}$$

∴ Party plan offers a cheaper price by 75p

you must say
by how much

(7)