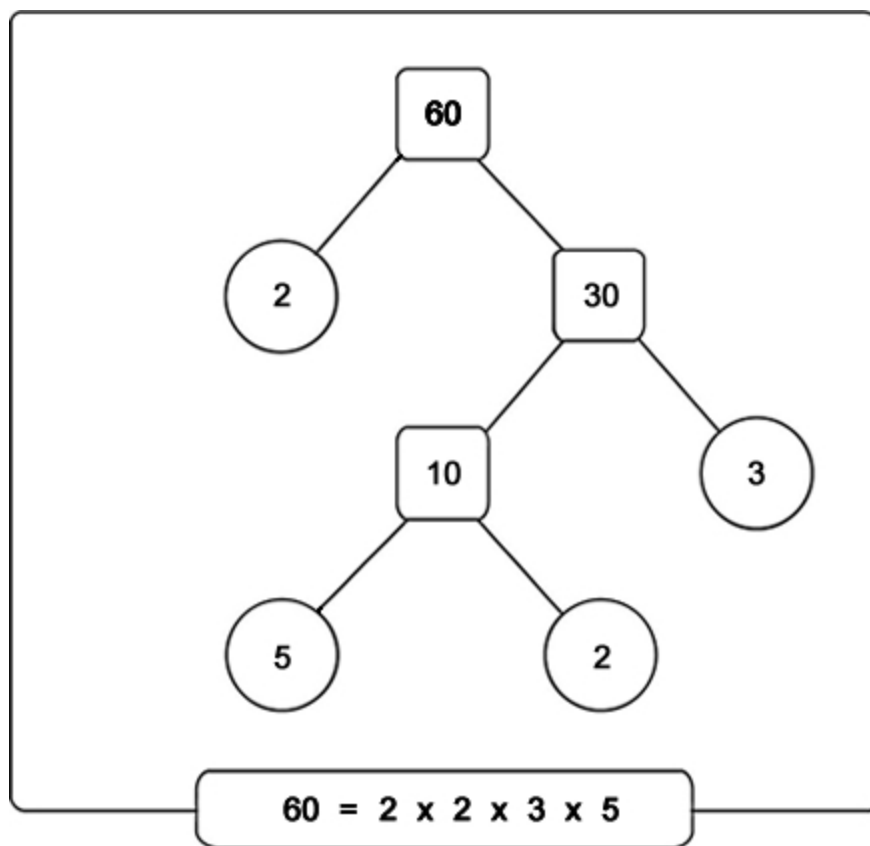


1. Prime factors

You can write any whole number as a product of its prime factors.

Here is an example for the number 60:



Write **225** as a product of its prime factors.

Show your method

$225 =$

2 marks

2. Put a ring around **all** the square numbers.

4 7 24 25 36 40

1 mark

3. **Square units**

Gustav says:

There are **100** square centimetres in a square metre.


Gustav is **wrong**.

How many square centimetres are there in a square metre?

cm²

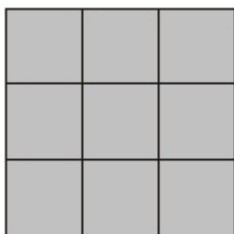
1 mark

4. **Square tiles**

Mary and David have square tiles like this: 

They arrange the tiles to make bigger squares.

Example: **9 tiles** can make a **3 by 3 square**.



(a) Mary arranges **25 tiles** to make one square.

Complete the sentence below.

25 tiles can make a _____ by _____ square.

1 mark

(b) David arranges **25 tiles** to make **two squares**.

His two squares are not the same size.

What are the sizes of David's squares?

First square: _____ by _____

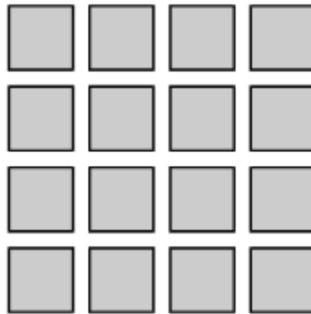
Second square: _____ by _____

2 marks

5.

Square number

The **4th** square number is **16**



What is the **5th** square number?

1 mark

6. Write a number

(a) Write a number that is **both**

greater than 10

and

a multiple of 4

1 mark

(b) Now write a number that is **both**

greater than 10

and

a square number

1 mark

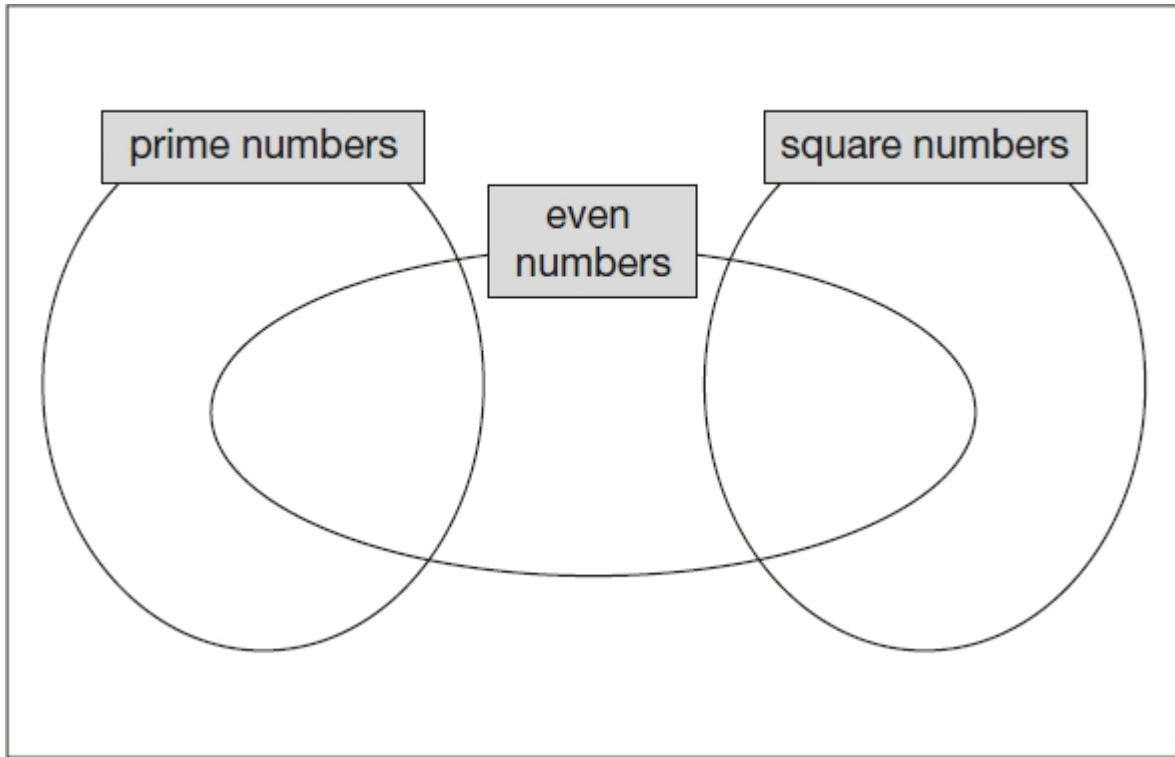
7. Write each number in its correct place on the diagram.

35

36

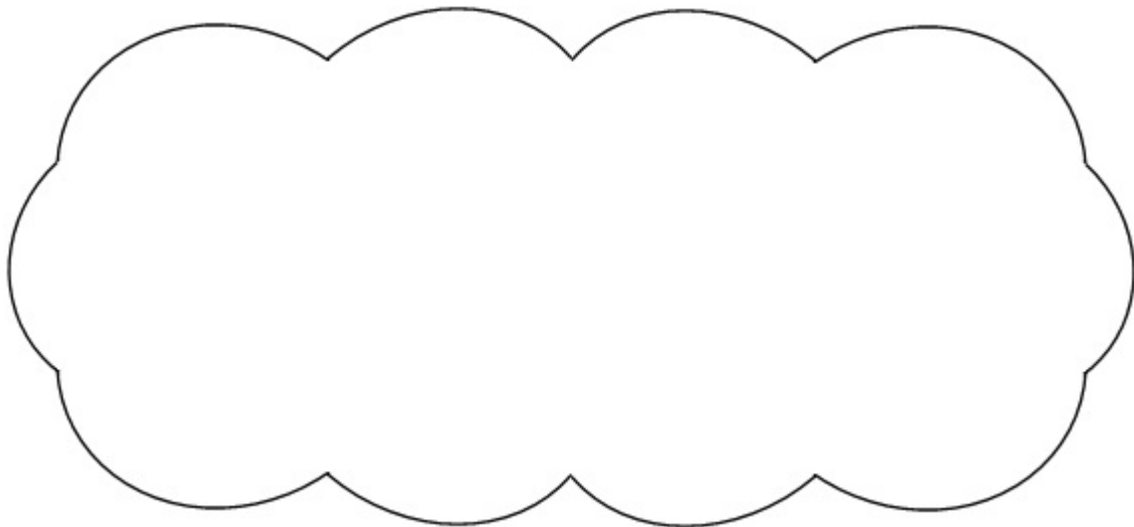
37

38



2 marks

8. Explain why **25** is a **square number**.



1 mark

Mark schemes

1.

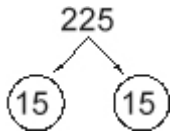
Gives 225 as a product of its prime factors, eg

- $5^2 \times 3^2$
- $3 \times 5 \times 5 \times 3$

2

or Shows or implies that 225 can be written as a product of at least two positive integers, other than 1 and 225, eg

- 3×75
- 45×5
- 25×9
- $225 \div 5 = 45$
- 3, 3, 5, 5



1

[2]

2.

Three numbers circled as shown:

$\textcircled{4}$ 7 24 $\textcircled{25}$ $\textcircled{36}$ 40

All three numbers must be circled for the award of the mark.
Accept any other clear way of indicating, such as ticking or underlining.

[1]

3.

10 000

Do not accept incomplete processing, eg

- 100^2

[1]

4.

(a) 5 by 5

1

- (b) 4 by 4
and
3 by 3, either order

U2

or Shows the values 16 and 9

or

Gives dimensions of a square and a rectangle, that use 25 tiles in total, eg

- 2 by 2
3 by 7
- 1 by 1
6 by 4

Do not accept fractions or decimals

1

[3]

5.

25

Do not accept incomplete processing, eg

- 5×5

[1]

6.

(a) Gives a number that is both greater than 10 and a multiple of 4, eg

- 12
- 16
- 40
- 140

1

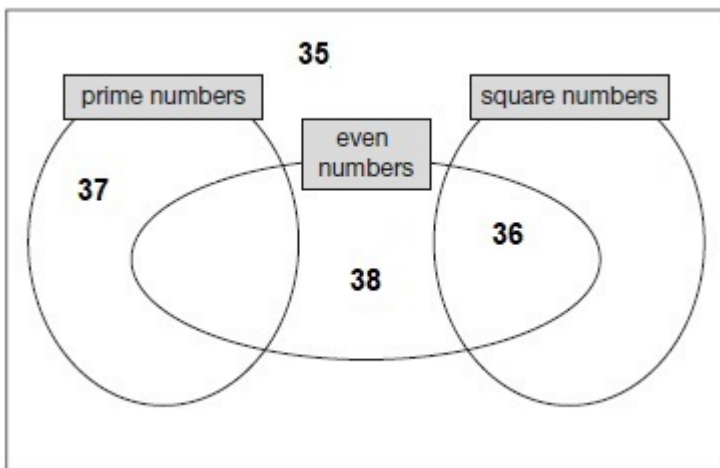
(b) Gives a number that is both greater than 10 and a square number, eg

- 16
- 25
- 100

1

[2]

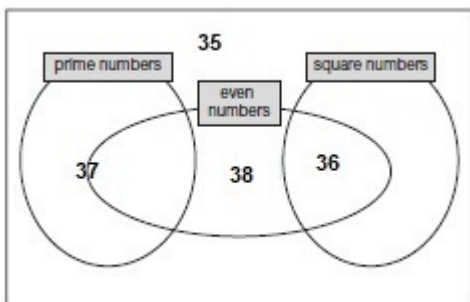
7. Award **TWO** marks for all four numbers placed correctly as shown:



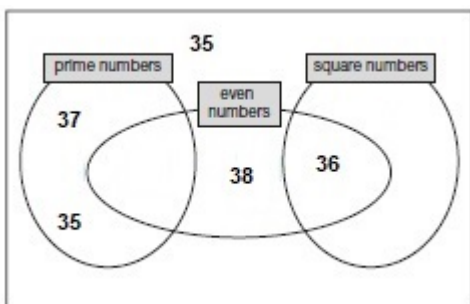
If the answer is incorrect, award **ONE** mark for three numbers placed correctly.

Accept alternative unambiguous indications, e.g. lines drawn from the numbers to the appropriate regions of the diagram.

Do not accept numbers written in more than one region, e.g.



OR



Up to 2m

[2]

8. Explains that 5×5 or 5 squared equals 25 (or similar) or that 25 is the square of a whole number (integer) or similar

[1]