Q1.

Put these values in order with the smallest first

5^2 3^2 3^3 2^3

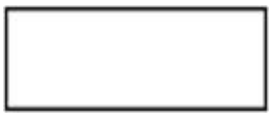
smallest largest

1 mark

Q2.

1 is both a square number and a cube number.
4 is a square number, but not a cube number.

What is the next number that is both a square number and a cube number?



1 mark

Q3.

Write the **three prime numbers** which multiply to make **231**

1 mark

Q4.

A number **multiplied by itself** gives the answer **49**

Circle the number.

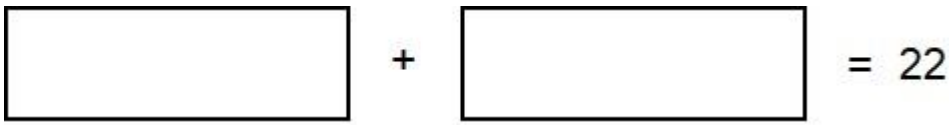
2 3 4 5 6 7 8 9

1 mark

Q5.

A **square** number and a **prime** number have a total of 22

What are the two numbers?



square number prime number

1 mark

Q6.

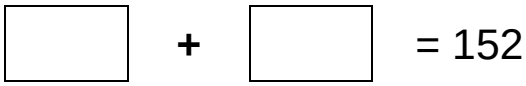
Write a cross on the numbers that are <u>not</u> square numbers.

1^2 2^3 3^3 4^3 5^3

1 mark

Q7.

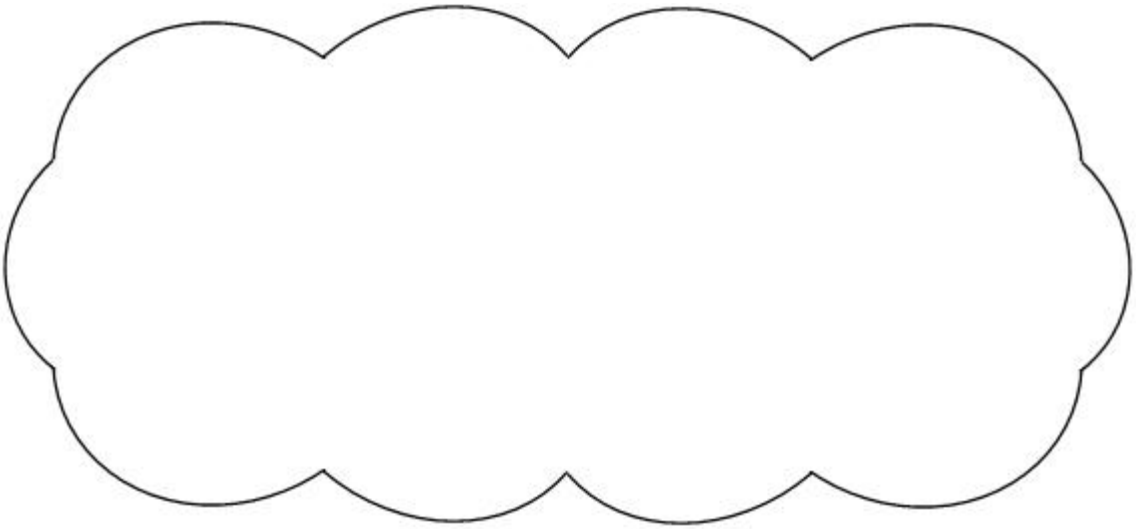
Find two **cube numbers** that total 152



1 mark

Q8.

Explain why 125 is a **cube** number.



1 mark

Q9.

Here are six digit cards.

Choose two cards each time to make the following two-digit numbers.

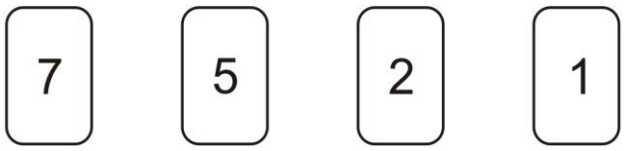
Use each digit card once.

a multiple of 5	
a square number	
a cube number	

2 marks

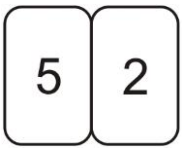
Q10.

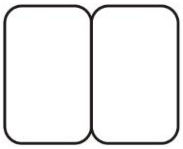
Here are four digit cards.

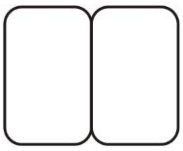


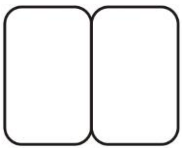
Choose two cards each time to make the following two-digit numbers.

The first one is done for you.

an even number 

a multiple of 9 

a square number 

a factor of 96 

2 marks

Q11.

Find two **square numbers** that total 45

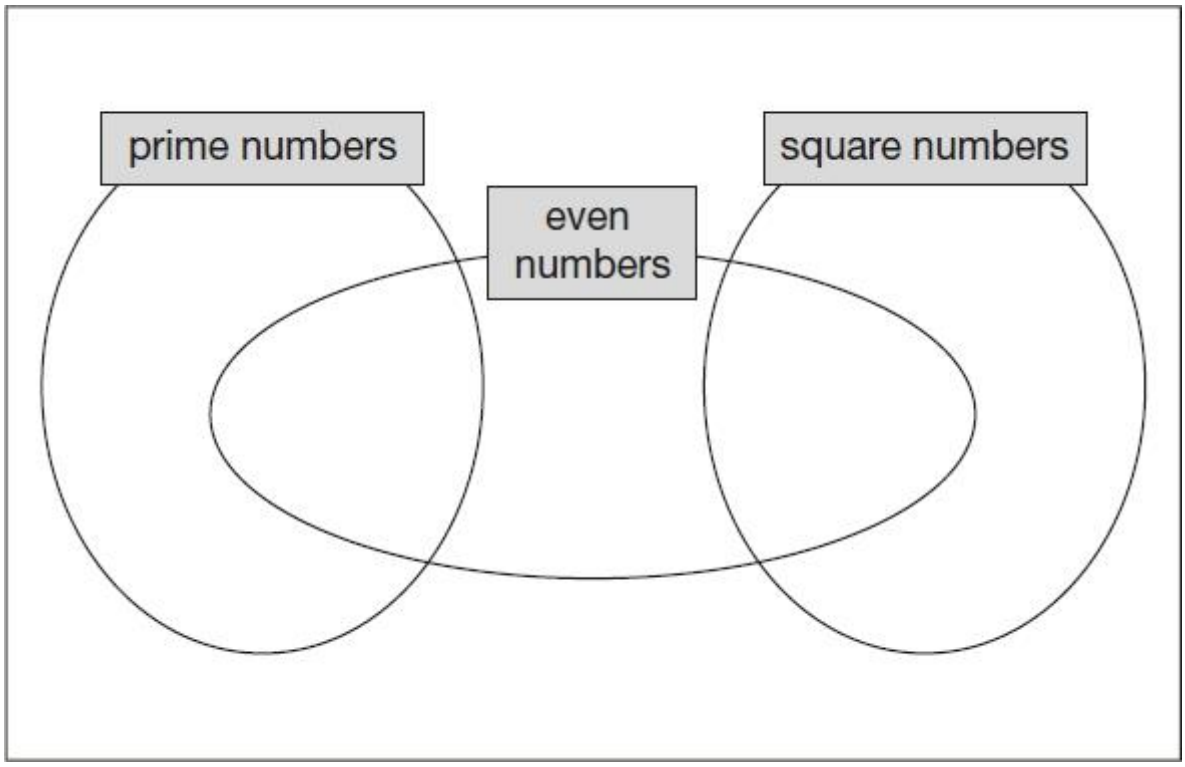
☐ + ☐ = 45

1 mark

Q12.

Write each number in its correct place on the diagram.

16 17 18 19



2 marks

Q13.

Here is a sorting diagram for numbers.

Write a number less than 100 in each space.

	even	**not** even
a cube number		
not a cube number		

2 marks

Q14.

36 and 64 are both square numbers

They have a sum of 100

Find two **square** numbers that have a sum of **130**

1 mark

Q15.

Here is a sorting diagram for numbers.

Write a number **less than 100** in each space.

	even	**not** even
a square number		
not a square number		

2 marks

Mark schemes

Q1.

2^3 3^2 5^2 3^3

Accept 8, 9, 25, 27

[1]

Q2.

64

Accept 8^2 and 4^3

[1]

Q3.

3 **AND** 7 **AND** 11

Accept numbers in any order.

[1]

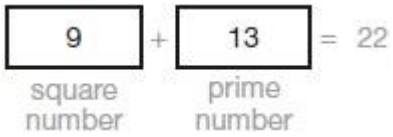
Q4.

2 3 4 5 6 ⑦ 8 9

[1]

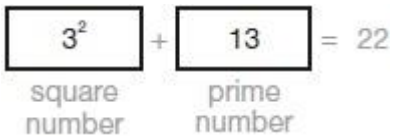
Q5.

Both numbers correct as shown:



Numbers must be in the correct order.

***Do not** accept:*



[1]

Q6.

1^3 ~~2^3~~ ~~3^3~~ 4^3 ~~5^3~~

Accept any unambiguous indication

[1]

Q7.

125 and 27, in either order.

Accept 5^3 and 3^3

[1]

Q8.

Explanation that recognises that 125 is 5 × 5 × 5

[1]

Q9.

Award **TWO** marks for six correct numbers, as shown.

a multiple of 5	3 5
a square number	8 1
a cube number	6 4

Award **ONE** mark for:

- Any two correct that satisfy the criteria in the table.
- Three correct with some duplication of cards.

***Do not** allow the use of other numbers.*

[2]

Q10.

Award **TWO** marks for all three numbers correct as shown:

- a multiple of 9 **2 7** **OR** **7 2**
- a square number **2 5**
- a factor of 96 **1 2**

If the answer is incorrect, award **ONE** mark for two numbers correct.

Up to 2

[2]

Q11.

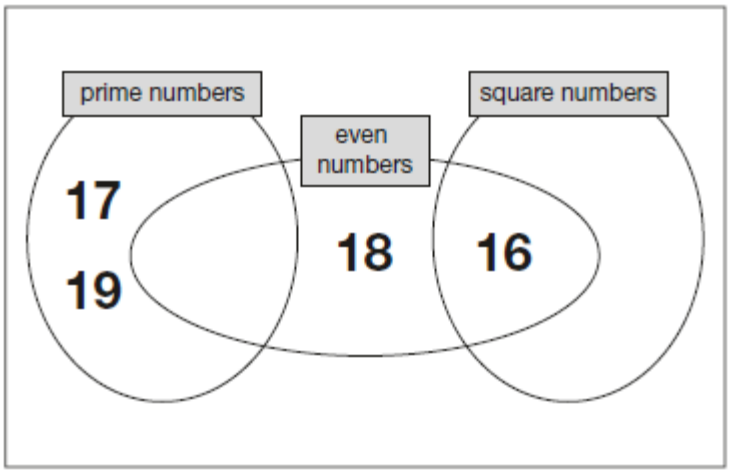
36 **AND** 9

Numbers may be given in either order.

[1]

Q12.

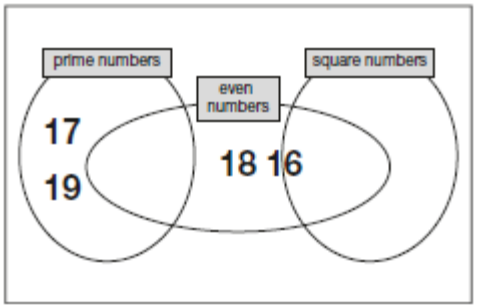
Award **TWO** marks for all four numbers placed correctly as shown:



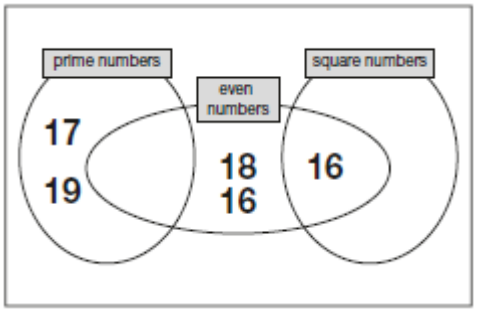
If the answer is incorrect, award **ONE** mark for three numbers placed correctly.

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]

Q13.

Award **TWO** marks for four correct numbers, e.g.

	even	**not** even
a cube number	**64**	**27**
not a cube number	**4**	**5**

Award **ONE** mark for any three correct.

[2]

Q14.

49 **AND** 81

OR

121 **AND** 9

Numbers may be given in either order.

U1

[1]

Q15.

Award **TWO** marks for a correct number written in each of the four boxes.

	even	not even
a square number	0 **OR** 4 **OR** 16 **OR** 36 **OR** 64	1 **OR** 9 **OR** 25 **OR** 49 **OR** 81
not a square number	even **AND** not a square **AND** less than 100	odd **AND** not square **AND** less than 100

If the answer is incorrect, award **ONE** mark for three boxes completed correctly.

Accept more than one number in each box, provided all are correct.

Up to 2

[2]