

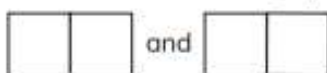
> 3.3 Prime and composite numbers

Worked example 3

Here are four digit cards.



Use each card once to make two 2-digit prime numbers.



composite number
factor
multiple
prime number

The prime numbers are:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, ...

Start by writing a list of prime numbers.

Answer: 13 and 29

Choose two of these numbers that satisfy the criteria.

You could also have chosen

There is more than one correct answer.

31 and 29

or 19 and 23

You are specialising when you choose a number and check whether it satisfies the criteria.



gettyimages

25 YEARS

SEAN GLADWELL

Exercise 3.3

Focus



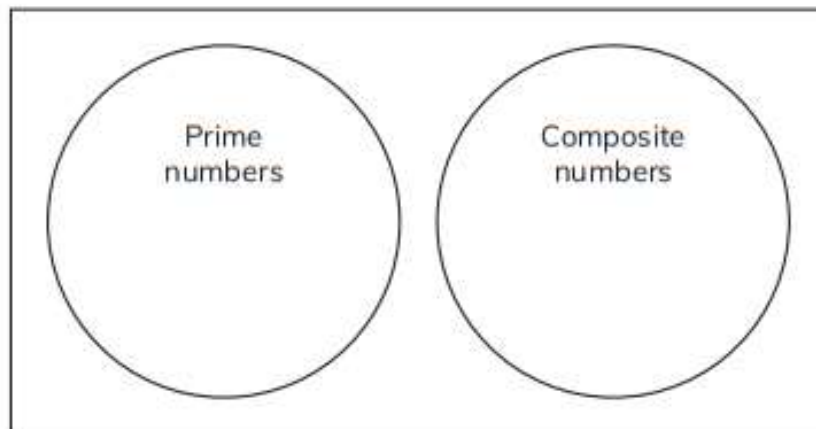
- 1 Here is a grid of numbers.

Shade all the prime numbers. What letter is revealed?

14	2	13	5	8
15	3	1	11	15
1	11	19	7	6
9	17	9	15	12
12	5	16	4	14



- 2 Write each number in the correct place on the diagram.



2, 3, 4, 5, 6

- 3 Complete this sentence.

A number with only two factors is called a _____ number.

Practice

- 4 Here is a grid of numbers.

Draw a path between the two shaded numbers that passes **only** through prime numbers.

You must **not** move diagonally.

2	4	6	8	13
3	23	29	71	65
1	51	45	7	5
15	92	25	1	2
31	37	16	14	11

- 5 a Find two different prime numbers that total 9.

$$\square + \square = 9$$

- b Find two different prime numbers that total 50.

$$\square + \square = 50$$

- 6 Show that 15 is a composite number.

Challenge

- 7 Use the clues to find two prime numbers less than 20.

Prime number 1: Subtracting 4 from this prime number gives a multiple of 5.

Prime number 2: This prime number is one more than a multiple of 4, but not 1 less than a multiple of 3.

Prime number 1 is _____ Prime number 2 is _____

- 8 Multiples of 6 are shaded on this grid.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Ingrid looks at the grid and says, 'One more than any multiple of 6 is always a prime number.'

Ingrid is wrong.

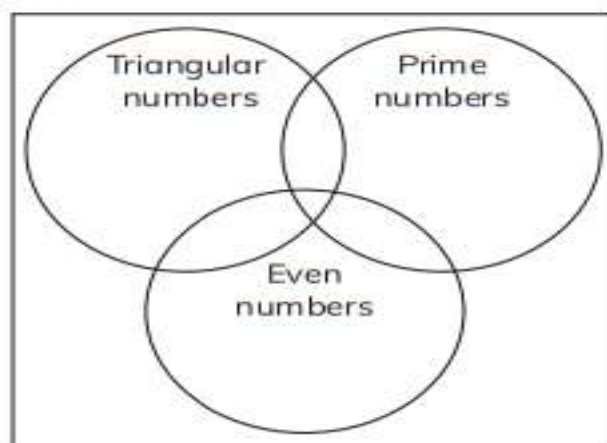
Explain how you know.

- 9 Arun chooses a prime number.

He rounds it to the nearest 10 and his answer is 70.

Write all the possible prime numbers Arun could choose.

- 10 Write each whole number from 1 to 20 in the correct place on this Venn diagram.

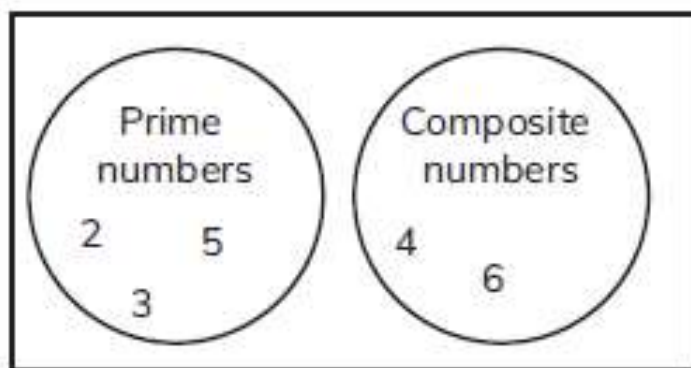


Exercise 3.3

Focus

1 P

2



3 A number with only two factors is called a prime number.

Practice

4

2	4	6	8	13
3	23	29	71	65
1	51	45	7	5
15	92	25	1	2
31	37	16	14	11

5 a $2 + 7$

b $19 + 31$ or $7 + 43$ or $13 + 37$ or $47 + 3$

- 6 Factors of 15 are 1, 3, 5 and 15. A prime number has only two factors.

Challenge

- 7 Prime number 1 is 19.

Prime number 2 is 13.

- 8 A counter example, for example:

- 1 more than 24 is 25 which is a square number
- 1 more than 54 is 55 which is a multiple of 5.

- 9 67, 71, 73

10

