

TARGET To identify prime numbers and composite numbers.

A prime number is a number which is divisible by only two different numbers: by itself and by one.

The first four prime numbers are 2, 3, 5 and 7. Notice that 1 is *not* a prime number.

4, 6, 8, 9 and 10 are not prime numbers because they are divisible by at least one of the first four prime numbers.

To find out if a two-digit number is a prime number you need to work out if it is divisible by one of the first four prime numbers, 2, 3, 5 and 7. A whole number which is not a prime number is called a composite number.

Examples

29 is not divisible by 2, 3, 5 or 7.

30 is divisible by 2, 3, and 5.

29 is a prime number.

30 is a composite number.

A

Write down the prime number in each group.

- 1 4, 5, 6
- 2 9, 10, 11
- 3 27, 28, 29
- 4 37, 38, 39
- 5 43, 44, 45
- 6 51, 52, 53
- 7 61, 62, 63
- 8 77, 78, 79
- 9 Find the next prime number:
 - a) after 20
 - b) after 32.
- 10 Find all the prime numbers below 50. There are 15. Remember, 1 is not a prime number.
- 11 Explain why 730 is not a prime number.

B

Write down the two numbers in each group which are *not* prime numbers.

- 1 1 2 3 4
- 2 16 17 18 19
- 3 21 31 41 51
- 4 27 37 47 57
- 5 63 73 83 93
- 6 61 71 81 91

Write down the next prime number after:

- 7 8
- 8 24
- 9 38
- 10 53
- 11 62
- 12 80
- 13 90
- 14 74.
- 15 Find all the prime numbers below 100. There are 25.
- 16 Explain why these numbers are composite numbers.
 - a) 1235
 - b) 9476

C

In the questions in this section you may need to work out if a number is divisible by prime numbers other than 2, 3, 5 and 7.

Example

121 is not a prime number because it is divisible by 11.

Decide whether each number is or is not a prime number.

- 1 105
- 2 113
- 3 119
- 4 131
- 5 137
- 6 143
- 7 149
- 8 152
- 9 163
- 10 201

Explain why the following numbers are composite numbers.

- 11 117
- 12 133
- 13 141
- 14 161
- 15 176
- 16 221
- 17 253
- 18 267
- 19 295
- 20 323