

> 1.3 Lowest common multiples

Worked example 1.3

Find the **lowest common multiple (LCM)** of 6 and 9.

Answer

The **multiples** of 6 are 6, 12, 18, 24, 30, 36, 42, 48, 54, ...

The multiples of 9 are 9, 18, 27, 36, 45, 54, ...

The **common multiples** are 18, 36, 54, ...

The lowest common multiple is 18.

You may not need to list so many multiples each time.

Key words

common multiple
lowest common multiple (LCM)
multiple

Exercise 1.3

Focus

- 1 Write down the first four multiples of:
 - a 4
 - b 7
 - c 12
 - d 30
- 2 How many multiples of 10 are less than 100?
- 3
 - a Work out the multiples of 8 that are less than 50.
 - b Work out the multiples of 5 that are less than 50.
 - c Write down the lowest common multiple of 8 and 5.
- 4
 - a Find the first five common multiples of 2 and 3.
 - b Copy and complete this sentence:
The common multiples of 2 and 3 are multiples of
 - c Find the lowest common multiple of 2 and 3.
- 5
 - a Write down the first three common multiples of 6 and 4.
 - b Copy and complete this sentence:
The common multiples of 6 and 4 are multiples of
 - c Write down the lowest common multiple of 6 and 4.
- 6 Find the lowest common multiple of:
 - a 3 and 10
 - b 4 and 10
 - c 5 and 10

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Practice

- 7 Show that the multiples of 3 and 5 are multiples of 15.
- 8 Find the lowest common multiple of 6 and 14.
- 9
 - a Find the lowest common multiple of:
 - i 7 and 2
 - ii 7 and 4
 - iii 7 and 6
 - b Is there an easy method to find the lowest common multiple of 7 and a number less than 7?
 - c Does the method in part b work for 7 and a number more than 7?
- 10 Look at these numbers: 90 92 94 96 98 100
 - a
 - i Which number is a multiple of 9 and 10?
 - ii Is this number the lowest common multiple?
 - b
 - i Which number is a multiple of 2 and 7?
 - ii Is this number the lowest common multiple?
 - c
 - i Which number is a multiple of 12 and 8?
 - ii Is this number the lowest common multiple?
- 11 Work out the lowest common multiple (LCM) of 2, 5 and 6.

Challenge

- 12 Find the LCM of 3, 8 and 9.
- 13 $24 \times 4 = 96$
 - a Explain why 96 is a common multiple of 4 and 24.
 - b Is 96 the lowest common multiple of 4 and 24? Give evidence to justify your answer.
- 14 Two numbers have a LCM of 45. The two numbers add up to 14. Find the two numbers.
- 15 The LCM of two numbers is 63. Work out the two numbers.

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