

Common Factors

The factors of a number are the numbers that divide exactly into that number. Common factors are factors that are shared by two or more numbers. Have a go at finding common factors here — look out for prime numbers.

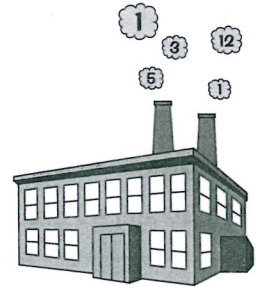
Example

Find all the common factors of 18 and 48.

The number 18 has factors 1, 2, 3, 6, 9 and 18.

The number 48 has factors 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48.

The common factors of 18 and 48 are 1, 2, 3 and 6.



Set A

- 1 Which of the numbers below have 9 as a factor?

29	54	108	63
71	99	18	

- 2 Which of the numbers below have 3 as a factor?

63	36	59	120
15	74	89	

Find a common factor (other than 1) of:

- 3 6 and 12
- 4 8 and 24
- 5 27 and 36
- 6 12 and 54
- 7 40 and 72
- 8 7 and 35

Find all the common factors of:

- 9 12 and 18
- 10 16 and 20
- 11 24 and 32
- 12 56 and 72

Find all the prime common factors of:

- 13 30 and 40
- 14 11 and 66

Set B

Find a common factor (above 2) of:

- 1 5 and 55
- 2 12 and 36
- 3 10 and 50
- 4 42 and 63
- 5 28 and 56
- 6 24 and 64

Find all the common factors of the following. Underline each prime common factor:

- 7 9 and 99
- 8 18 and 24
- 9 21 and 42
- 10 39 and 52
- 11 42 and 56

- 12 Marcel thinks of a number between 1 and 50. The common factors it has with 24 are: 1, 2, 3, 4, 6 and 12. What could Marcel's number be?

- 13 Lexi is thinking of two numbers between 1 and 50. Their common factors are: 1, 2, 7 and 14. List all the pairs of numbers that Lexi could be thinking of.

Set C

Find all the common factors of:

- 1 16 and 48
- 2 36 and 54
- 3 66 and 99
- 4 18 and 41
- 5 15 and 60
- 6 32 and 48

Find the highest common factor of:

- 7 9 and 63
- 8 16 and 40
- 9 11 and 88
- 10 24 and 56
- 11 36 and 144
- 12 66 and 110

- 13 17 is a prime number. Kit says that the only common factor of 17 and any other number will be 1. Explain why Kit is wrong.

- 14 Two numbers are "coprime" if their only common factor is 1. Which numbers from 1 to 10 are coprime with 18?

I understand and can identify common factors.



Common Multiples

All the numbers that appear in a number's times table are multiples of that number.

A common multiple of two numbers is a number that's a multiple of both — so appears in both times tables.

Examples

Find two common multiples of 4 and 5.

4 times table: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 ...

5 times table: 5, 10, 15, 20, 25, 30, 35, 40 ...

So **20** and **40** are common multiples 4 and 5.

What is the lowest common multiple of 4 and 5?

The smallest common multiple is **20**.

Set A

Find a common multiple of:

1 3 and 6

2 5 and 2

3 5 and 7

4 4 and 12

5 6 and 8

6 10 and 12

7 Find all the numbers below that are multiples of both 4 and 6:

36	54	60	12
24	40	28	

8 Find all the numbers below that are multiples of both 7 and 3:

21	14	77	54
36	63	42	

9 Find two common multiples of 5 and 8 between 1 and 100.

10 Find three common multiples of 4 and 12 between 20 and 50.

11 Find four common multiples of 9 and 3 between 10 and 50.

Set B

Find one common multiple between 20 and 40 of:

1 4 and 10

2 2 and 12

3 7 and 14

4 6 and 3

5 5 and 7

6 9 and 6

7 Find all the numbers below that are multiples of both 9 and 4:

81	108	27	36
52	90	72	

8 Find all the numbers below that are multiples of both 8 and 12:

36	24	96	48
80	72	64	

Find the lowest common multiple of:

9 3 and 9

10 4 and 6

11 7 and 10

12 9 and 12

13 1 and 5 and 15

14 2 and 6 and 11

Set C

Find a common multiple between 50 and 80 of:

1 11 and 7

2 4 and 8

3 6 and 10

4 3 and 12

5 7 and 8

6 8 and 12

Find the lowest common multiple of:

7 3 and 7

8 12 and 15

9 6 and 8

10 6 and 21

11 2 and 5 and 7

12 4 and 10 and 12

13 Think of two prime numbers and then find the lowest common multiple.

Do this a few more times with different pairs of prime numbers.

What do you notice about your answers?

I know and can identify common multiples.

