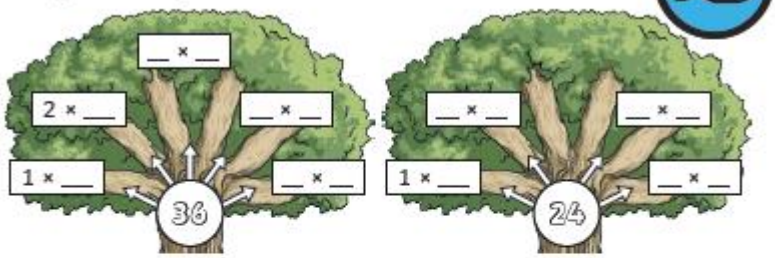
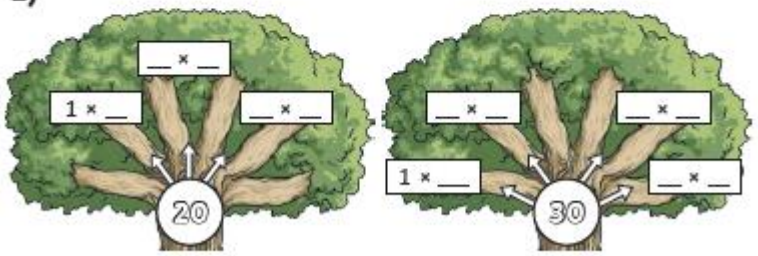
1) Complete the factor trees, identifying all factors of each number.



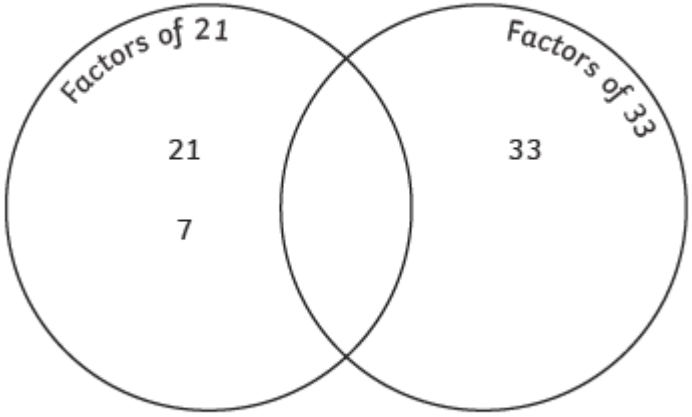
List the common factors of 36 and 24.

2)



List the common factors of 20 and 30.

3) Complete the Venn diagram by adding the missing factors.



Which factors are missing?
Which of these are common factors?

1) True or false? Explain your answers.

a) Only even numbers have more than 1 common factor.

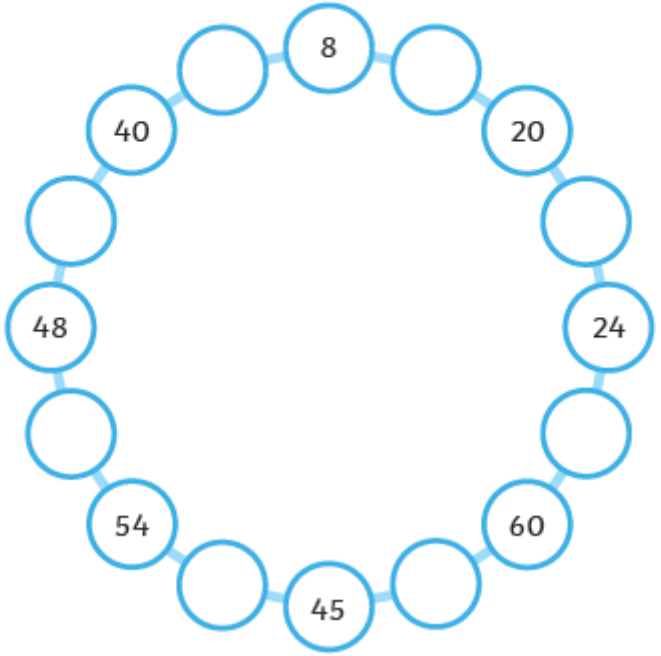
b) 10 is a common factor of 20 and 35.

c) 2 and 5 are common factors of all multiples of 10.

d) If you add a multiple of 5 to a multiple of 10, you get a multiple of 5.

2) The numbers in the arrow are common factors of some of the numbers in the circles. Can you place each number in a circle so that it is a common factor of the number either side?

1, 3, 15, 2, 4, 6, 9, 8



1) I am thinking of 2 numbers less than 100. They have exactly 4 common factors: 1, 2, 5 and 10. What could the numbers be?

Give 4 possible pairs of numbers.

2) I am thinking of 2 numbers less than 100. They have exactly 3 common factors. What could the numbers be? Find 4 possible pairs of numbers, together with their 3 common factors.

3) Which two numbers less than 50 have the greatest number of common factors? Explore and record your findings.

ANSWERS

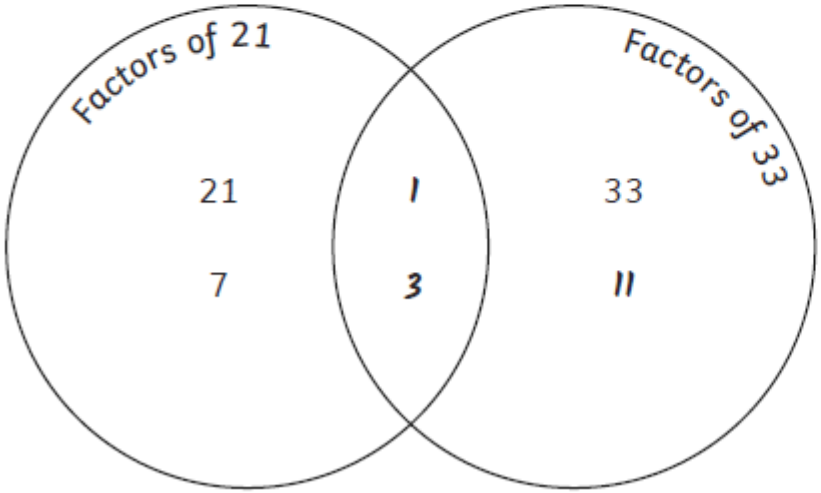
1) 1 × 36 1 × 24
2 × 18 2 × 12
3 × 12 3 × 8
4 × 9 4 × 6
6 × 6

The common factors of 36 and 24 are 1, 2, 3, 4, 6 and 12.

2) 1 × 20 1 × 30
2 × 10 2 × 15
4 × 5 3 × 10
5 × 6

The common factors of 20 and 30 are 1, 2, 5 and 10.

3)



The missing factors are 1, 3 and 11.
The common factors are 1 and 3.

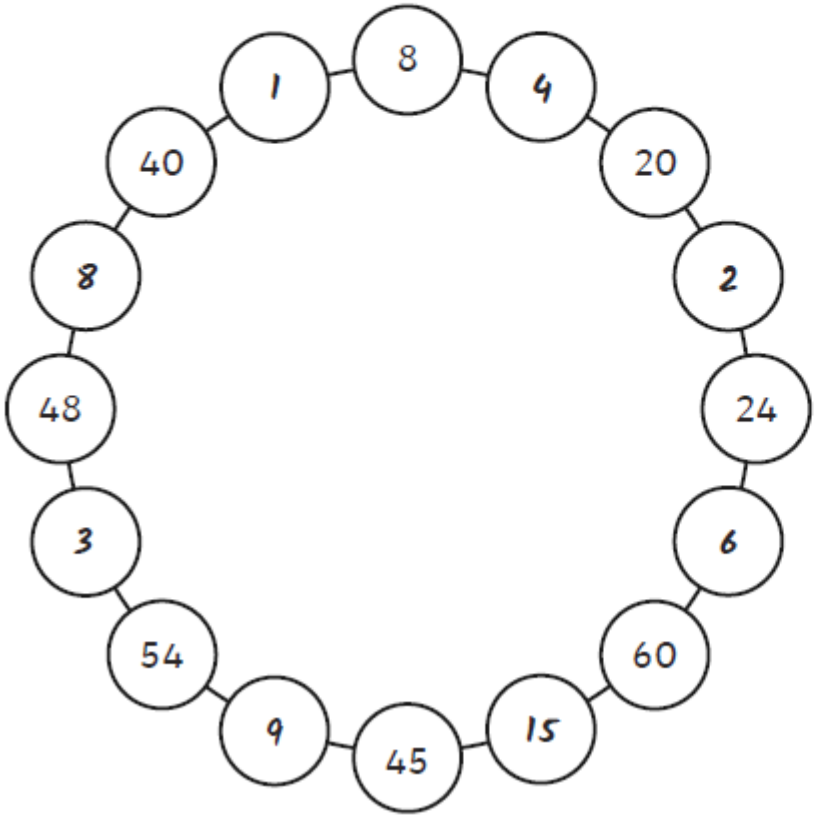
1) a) False. For example, 15 and 45 have 1, 3, 5 and 15 as common factors.

b) False. 10 is not a factor of 35.

c) True. All multiples of 10 are even numbers so 2 is a factor of all of these. 5 is factor of every multiple of 10.

d) True. 10 is a multiple of 5 so adding another multiple of 5 will also be a multiple of 5.

2)



A number of different solutions are possible. One of these is shown. In all solutions, 9 must be placed between 54 and 45 and 15 must be placed between 45 and 60.

1) Answers should be pairs of multiples of 10 between 10 and 90, for example:
10 and 20
20 and 30
30 and 40
70 and 80

2) A variety of answers are possible, for example:
4 and 8 – 1, 2, 4
9 and 18 – 1, 3, 9
25 and 50 – 1, 5, 25

3) 24 and 48 have 8 common factors: 1, 2, 3, 4, 6, 8, 12 and 24.