Find common factors of a set of numbers including the HCF

1 a) List the factors of 20

1, 2, 4, 5, 10, 20

b) List the factors of 30

1, 2, 3, 5, 6, 10, 15, 30

c) What are the common factors of 20 and 30?

1, 2, 5, 10

d) What is the highest common factor (HCF) of 20 and 30? | 10 |

2 a) List the factors of 25

1, 5, 25

b) List the factors of 50

1, 2, 5, 10, 25, 50

c) What is the highest common factor (HCF) of 25 and 50? | 25 |

3 a) By listing the factors of each number, find the HCF of 36 and 27

36: 1, 2, 3, 4, 9, 12, 18, 36

27: 1, 3, 9, 27

The highest common factor of 36 and 27 is | 9 |

b) Use your answer to part a) to write the HCF of each pair of numbers.

360 and 270 | 90 |

72 and 54 | 18 |

4 a) List all the common factors of 32 and 48
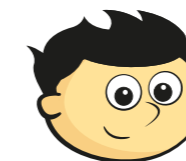
32: 1, 2, 4, 8, 16, 32

48: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

1, 2, 4, 8, 16

b) What is the HCF of 32 and 48? | 16 |

5

30 and 31 have a highest common factor of zero.

Do you agree with Jack? __No__

Explain your answer.

6 The common factors of two numbers are 1, 2, 3 and 6

What could the two numbers be?
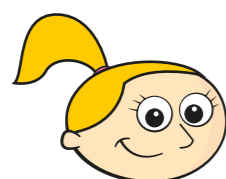
e.g. 6 and 12

Is there more than one possible answer?

7 Here are some numbers.

46   16   56   36

Identify two of the numbers that have a highest common factor of 8

16 and 56

8 Eva is finding the highest common factor of 13 and 39

13 is a prime number, so the highest common factor of 13 and 39 must be 1

Do you agree with Eva? __No__

Talk about it with a partner.

9 Find the HCF of 42, 77 and 91

7

10 A florist has 42 pink flowers and 36 white flowers.

a) What is the greatest number of identical bunches she can make that uses all the flowers?

6

b) How many flowers of each colour will be in a bunch?

7 pink and 6 white

11 Huan finds the factors of 75 and the factors of 125

He writes each factor on a card with no repeats of any common factors.

He then places the number cards in a bag.

Esther picks a card at random.

What is the probability that she picks the HCF of 75 and 125?

75: 1, 3, 5, 15, 25, 75

125: 1, 5, 25, 125

Common factors: 1, 5, 25

$\frac{1}{3}$

12 In this square, the product of the numbers in any given row or column is written on the outside of the square.

Fill in the missing numbers.

7	4	28
8	6	48
56	24	