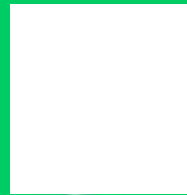


Maths Mastery

Factors, Multiples and Prime
Numbers



Check

Explain how you would find the common factors of 48 and 75.

Find the factors of 48 by finding factor pairs:

$$1 \times 48, 2 \times 24, 3 \times 16, 4 \times 12, 6 \times 8$$

so the factors are:

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

*Find the factors of 75 by finding factor pairs:

$$1 \times 75, 3 \times 25, 5 \times 15$$

so the factors are:

$$1, 3, 5, 15, 25, 75.$$

Look for common factors:

in this case 1 and 3.

*Note it would be possible simply to look for the odd factors of 48 to see if they are factors of 75.

Compare your explanation with a partner.
How are your ideas different?

Hide
Answers

Equivalent Fractions

Use common factors to find equivalent fractions for the following fractions:

$$\frac{15}{50} \quad (\text{common factor } 5) = \frac{3}{10}$$

$$\frac{36}{45} \quad (\text{common factor } 9) = \frac{4}{5}$$

$$\frac{18}{24} \quad (\text{common factor } 6) = \frac{3}{4}$$

$$\frac{48}{60} \quad (\text{common factor } 12) = \frac{4}{5}$$

$$\frac{20}{32} \quad (\text{common factor } 4) = \frac{5}{8}$$

Come up with some of your own for a partner.

Hide
Answers

Common Multiples

Comment on this explanation of how to find the common multiples of 12 and 25.

“ $12 \times 25 = 300$, so 300 is the common multiple of 12 and 25.”

Multiples of 300 will also be common multiples; 600, 900, 1200 etc
Smaller multiples of 12 and 25 may also be common multiples, so they need to be checked. Check multiples of 25: (only need to check even multiples of 25 because 12 is even.) 50, 100, 150, 200, 250 – none are multiples of 12, so the smallest multiple is 300.



Hide
Answers

Smallest Common Multiples

The lowest common multiple of 2 numbers is always the product of those numbers.

Comment on this statement:

Sometimes the lowest common multiple is a factor of the product of the 2 numbers.
e.g. the lowest common multiple of 6 and 8 = 24. $6 \times 8 = 48$

When the lowest common multiple is a factor of the product of the 2 numbers, how would you find it?

Divide the product by the highest common factor of the 2 numbers.



Prime Numbers

Explain why 27 is not a prime number.

27 is not a prime number because 3 and 9 are factors as $3 \times 9 = 27$. Prime numbers only have 1 and itself as a factor.

Compare your explanation with others.



Hide
Answers

Lowest Common Multiple and Highest Common Factor

How does the highest common factor help find the lowest common multiple?

Find the highest common factor and lowest common multiple of these numbers, and complete the table. What is the relationship?

Number 1	Number 2	Product	Highest Common Factor	Lowest Common Multiple
7	9	63	1	63
4	5	20	1	20
6	8	48	2	24
8	12	96	4	24

The lowest common multiple is the product divided by the highest common factor.

Hide
Answers

