Prime Factors, HCF and LCM

GCSE Maths · Foundation and Higher tier · Grades 3–5 · About 20 minutes · 8 questions

Name _____ Date _____ Score / 8

WHAT YOU WILL PRACTISE

- Write a number as a product of its prime factors
- Find the highest common factor (HCF) of two numbers
- Find the lowest common multiple (LCM) of two numbers

WORKED EXAMPLE

Find the HCF and the LCM of 12 and 20.

1. Write each number as a product of primes: $12 = 2^2 \times 3$ and $20 = 2^2 \times 5$.
2. For the HCF, take the primes they share: $2^2 = 4$.
3. For the LCM, take every prime with its highest power: $2^2 \times 3 \times 5 = 60$.

Answer: HCF = 4, LCM = 60

Questions

Show your working in the space under each question.

1. Write 36 as a product of its prime factors

2. Write 60 as a product of its prime factors

3. Write 84 as a product of its prime factors

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4. Find the highest common factor (HCF) of 18 and 24

5. Find the lowest common multiple (LCM) of 6 and 8

6. Find the HCF of 36 and 60

7. Find the LCM of 12 and 18

8. Bus A leaves the station every 12 minutes and bus B leaves every 15 minutes. Both leave at 9:00 am. At what time do they next leave together?

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Answers: Prime Factors, HCF and LCM

Mark your own work, then go back to any question you got wrong before reading the tutor tip.

Q	QUESTION	ANSWER
1	Write 36 as a product of its prime factors	**$2^2 \times 3^2$**
2	Write 60 as a product of its prime factors	**$2^2 \times 3 \times 5$**
3	Write 84 as a product of its prime factors	**$2^2 \times 3 \times 7$**
4	Find the highest common factor (HCF) of 18 and 24	**6**
5	Find the lowest common multiple (LCM) of 6 and 8	**24**
6	Find the HCF of 36 and 60	**12**
7	Find the LCM of 12 and 18	**36**
8	Bus A leaves the station every 12 minutes and bus B leaves every 15 minutes. Both leave at 9:00 am. At what time do they next leave together?	**10:00 am (after 60 minutes)**

TUTOR TIP

The HCF uses only the primes the numbers share. The LCM uses every prime, taking the highest power of each.

Stuck on a question? Work through it live with a tutor.

YFCampus offers one-to-one online Maths tutoring matched to your school curriculum. Book a free trial class at **www.yfcampus.com/uk/book-lesson**

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