

Look at these statements. Decide if each one is always, sometimes or never true. Explain your reasoning for each statement.



Always, sometimes, never?

- a)** A number has an even number of factors.

- b)** Pairs of even numbers have more common factors than pairs of odd numbers.

- 1)** Is Levi correct? Explain your reasoning and use examples to prove it.

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



Levi

- 2)** For each set of common multiples below, find a pair of numbers for which they could be the common multiples.

- | | | |
|-------------------------------|-------------------------------|--------------------------------|
| a) 12, 24 and 36 _____ | c) 21, 42 and 63 _____ | e) 18, 27 and 36 _____ |
| b) 15, 30 and 45 _____ | d) 10, 20 and 30 _____ | f) 36, 72 and 108 _____ |

- 1) Who do you agree with?
Explain your reasoning and provide examples.



Bethany

I think there are more prime numbers between 1 and 50.



Sienna

I think there are more prime numbers between 50 and 100.

- 2) Do you agree with Michael's statement?
Explain your reasoning?



Michael

All prime numbers are odd, but not all odd numbers are prime.

- 3) Arthur sets a challenge for his friend Kenneth.
Is Kenneth correct? Explain your reasoning.



Arthur

I am thinking of a number. It is greater than 40. It is less than 60. It is a prime number. The sum of its digits is an even number. How many possibilities are there for what the number could be?



Kenneth

There are two possibilities.