

Factors and Multiples Problems

Do Now questions

Write at least 10 expressions that equal 24. Try to include add, subtract, multiply, divide, powers, fractions, roots, etc.

Write at least 10 expressions that equal $9a^2b$. Try to include add, subtract, multiply, divide, powers, fractions, roots, etc.

Q1. Find two numbers whose LCM = 23.

Ans: 1 and 23

Q2. Find two numbers whose LCM = 20.

Ans: 1 and 20, or 4 and 5.

Q3. Find all pairs of numbers whose LCM = 24.

Ans: 1 and 24, 3 and 8.

Q4. Find all pairs of numbers whose LCM = 42.

Ans: 1 and 42, 2 and 21, 3 and 14, 6 and 7.

Q*. Find the LCM of 2, 3, 4 and 5.

Ans: 60

Q*. Find the LCM of 2, 3, 6 and 12.

Ans: 12

Q*. Find the LCM of 4, 8, 10 and 21.

Ans: 840

Q*. Find two numbers that have an LCM = 180 and a HCF = 3. Can you find all three answers?

Ans: 9 and 60, or 12 and 45, or 15 and 36.

Q*. The number 36 has the property that it is divisible by its units digit (ones digit), ie 36 is divisible by 6. How many whole numbers between 0 - 100 have this property?

Ans: 1 to 9 **(9)**, 21, 31, ..., 91 **(8)**, 22, 42, 62, 82 **(4)**, 33, 63, 93 **(3)**, 24, 44, 64, 84 **(4)**, 15, 25, ... 95 **(9)**, 36, 66, 96 **(3)**, 77 **(1)**, 48, 88 **(2)**, 99 **(1)** **Total: 44**

Q*. What would the units digit be for 3 raised to the 9999th power?

Ans: 7

Q*. Using each of the digits 0, 1, 2, 3, ..., 9 exactly once, write a 10 digit number so that the first digit is divisible by 1, the number formed by the first two digits is divisible by 2, the number formed by the first

three digits is divisible by 3, and so on. Finally, the number formed by the first ten digits must be divisible by 10.

Ans: 3816547290

Q9. Six thousand apples were harvested. But every 3rd apple was too small, every 4th apple was too green and every 10th apple was bruised. The remaining apples were perfect. How many perfect apples were harvested?

Ans: 2800

