

## A collection of short problems on factors, multiples and primes

Q1.

If the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 are all multiplied together, how many zeros are there at the end of the answer?

(<http://nrich.maths.org/5754>)

Q2.

The numbers 72,8,24,10,5,45,36,15 are grouped in pairs so that each pair has the same product. Which number is paired with 10?

(<http://nrich.maths.org/5759>)

Q3.

The following sequence continues indefinitely:

$$27 = 3 \times 3 \times 3$$

$$207 = 3 \times 3 \times 23$$

$$2,007 = 3 \times 3 \times 223$$

$$20,007 = 3 \times 3 \times 2223 \dots\dots$$

Which of the following integers is a multiple of 81?

A: 200,007

B: 20,000,007

C: 2,000,000,007

D: 200,000,000,007

E: 20,000,000,000,007

(<http://nrich.maths.org/5765>)