

Add two digits after 16 in such a way that the new 4-digit number is divisible by 3,4 and is the lowest one. Find out that new 4-digit number.

**Solution.**

Let  $x$  and  $y$  be two digits after 16. Our number will have a form:

$$16xy$$

Let's find  $x$  and  $y$ .

Our number is divisible by 3:

$$1 + 6 + x + y = 3k, \quad k \in \mathbb{N}$$

Our number is divisible by 4:

$$x + y = 0 \quad \text{or} \quad x + y = 4n, \quad n \in \mathbb{N}$$

We see, that  $x + y \neq 0$ .

So

$$x + y = 3k - 7 = 4n$$

$$k = 5, \quad n = 2$$

Then

$$x + y = 8$$

The number is the lowest one, so

$$x = 0, \quad y = 8$$

**Answer:** 1608.