

Natural numbers test - answers

1. List the first four natural positive multiples of 15.

$$15, 39, 45, 60$$

2. Determine the set of all natural factors of 60 and underline prime factors.

$$ND_{60} = \{1, 60, 2, 30, 3, 20, 4, 15, 5, 12, 6, 10\}$$

3. Explain why 2019 is not a prime number?

$$2019 = 3 \times 67$$

4. Express 60 as a product of its prime factors.

$$60 = 2^2 \times 3 \times 5$$

5. Find the Greatest Common Divisor of 46200 and 54600.

$$GCD(4620, 5460) = 100 \times 2 \times 3 \times 7 = 4200$$

46200	54600	100
462	546	2
231	273	3
77	91	7
11	13	

6. Find the Least Common Multiple of 46200 and 54600.

$$LCM(4620, 5460) = 4200 \times 11 \times 13 = 600600$$

7. Find the remainder of division 2345 by 21.

$$r = 16$$

111	
<b>2347</b>	<b>: 21</b>
-21	
24	
-21	
37	
-	
21	
16	

8. An integer  $a$  is divisible by 11. Write the integer  $a$  in the form of an algebraic expression, with one variable  $k$ , where  $k \in \mathbb{Z}$ .  $a = 11k$

9. A natural number  $b$ , when divided by 13, gives the remainder 5. Write the natural number  $b$  in the form of an algebraic expression, with one variable  $n$ , where  $n \in \mathbb{N}$ .

$$b = 13n + 5$$

10. A radio station is having a promotion in which every 12-th caller receives a free concert ticket and every 15-th caller receives a limo ride. Which caller will be the first one to win both?

$$LCM(12, 15) = 3 \times 4 \times 5 = 60$$

12	15	3
4	5	

Answer: The 60-th caller will win both ticket and ride.