Class 10 Mathematics - Real Numbers

Name: _____

Date: _____

Advanced Worksheet 2

Questions

1. Determine whether $13 \times 17 \times 19 + 19$ is prime or composite.
2. Determine whether $11 \times 23 \times 29 + 29$ is prime or composite.
3. How many zeroes will the number $2^5 \times 5^5$ have at the end?
4. How many trailing zeroes will $2^7 \times 5^4$ have?
5. Explain why 8^n can never end with the digit 0.
6. Can a number whose prime factorisation contains only the prime 2 end with the digit 0?

Answer Key

1.

$13 \times 17 \times 19 + 19$

$= 19(13 \times 17 + 1)$

$= 19 \times 222$

Composite

2.

$11 \times 23 \times 29 + 29$

$= 29(11 \times 23 + 1)$

$= 29 \times 254$

Composite

3.

$2^5 \times 5^5$

$= (2 \times 5)^5$

$= 10^5$

5 zeroes

4.

$2^7 \times 5^4$

$= (2^4 \times 5^4) \times 2^3$

$= 10^4 \times 8$

4 trailing zeroes

5.

$8^n = 2^{3n}$

It contains no factor 5.

Hence it cannot end in 0.

6.

No.

A number ending in 0 must contain both factors 2 and 5.