

Class 10 Mathematics - Real Numbers

Name: _____

Date: _____

Advanced Worksheet 3

Questions

1. Without performing division, determine whether $7/125$ has a terminating decimal expansion.
2. Without performing division, determine whether $13/75$ has a terminating decimal expansion.
3. Determine whether $23/800$ has a terminating or non-terminating repeating decimal expansion.
4. Determine whether $11/24$ has a terminating or non-terminating repeating decimal expansion.
5. Determine whether $7/160$ has a terminating or non-terminating repeating decimal expansion.
6. State the condition for a rational number p/q to have a terminating decimal expansion.

Answer Key

1.

$$125 = 5^3$$

Only factor 5

Terminating

2.

$$75 = 3 \times 5^2$$

Contains factor 3

Non-terminating repeating

3.

$$800 = 2^5 \times 5^2$$

Only factors 2 and 5

Terminating

4.

$$24 = 2^3 \times 3$$

Contains factor 3

Non-terminating repeating

5.

$$160 = 2^5 \times 5$$

Only factors 2 and 5

Terminating

6.

After simplification, the denominator must have only prime factors 2 and/or 5.

