



Class 9 Maths – Chapter 3



Exercise Set 3.5 – The World of Numbers

Based on the new Ganita Manjari Grade 9 Part I textbook, page 61.

Q1. Terminating or Repeating Decimals?

Without performing long division, determine which of the following rational numbers have **terminating decimals** and which have **repeating decimals**:

- (i) $7/20$
- (ii) $4/15$
- (iii) $13/250$



Solution:

✚ A rational number has a **terminating decimal** if, in its simplest form, its denominator has only the prime factors **2 and/or 5**.

(i) $7/20$

$$20 = 2^2 \times 5$$

The denominator contains only **2 and 5**.

✓ Therefore, **$7/20$ has a terminating decimal.**

$$7/20 = 0.35$$

(ii) $4/15$

$$15 = 3 \times 5$$

The denominator contains **3** as well as 5.

✗ Therefore, **$4/15$ has a repeating decimal.**

$$4/15 = 0.2666\ldots$$

(iii) **13/250**

$$250 = 2 \times 5^3$$

The denominator contains only **2 and 5**.

✓ Therefore, **13/250 has a terminating decimal**.

$$13/250 = \mathbf{0.052}$$

QUICK ANSWER KEY

1. **7/20** → ✓ Terminating → **0.35**
2. **4/15** → ↻ Repeating → **0.2666...**
3. **13/250** → ✓ Terminating → **0.052**

 **Key rule:**

If the denominator of a rational number in simplest form has only **2 and/or 5** as prime factors → **terminating decimal**.

If it has any other prime factor → **non-terminating repeating decimal**.