STD – 10 MATHS

CHAPTER - 1

REAL NUMBER

EXERCISE-1.4 (Q.2)

2. Write down the decimal expansions of those rational numbers in Question 1 above which have terminating decimal expansions.

(i) $\dfrac{13}{3125}$

$= \dfrac{13 \times 2^5}{5^5 \times 2^5}$

$= \dfrac{13 \times 2^5}{(5 \times 2)^5}$ $(\because a^5 \times b^5 = ab^m)$

$$= \frac{13 \times 32}{(10)^5}$$

$$= \frac{416}{100000}$$

$$= 0.00416$$

(ii) $\dfrac{17}{8}$

$= \dfrac{17}{2^3} \times \dfrac{5^3}{5^3}$

$= \dfrac{17 \times 125}{(2 \times 5)^3}$ $(\because a^m \times b^m = ab^m)$

$= \dfrac{2125}{(10)^3}$

$= \dfrac{2125}{1000}$

$= 2.125$

(iii) $\dfrac{64}{455}$

➤ $\dfrac{64}{455}$ **has a Non terminating decimal expansion.**

(iv) $\dfrac{15}{1600}$

$= \dfrac{15}{2^6 \times 5^2} \times \dfrac{5^4}{5^4}$

$= \dfrac{15 \times 5^4}{2^6 \times 5^6}$

$= \dfrac{15 \times 625}{(2 \times 5)^6} \ (\because a^m \times b^m = ab^m\ )$

$= \dfrac{9375}{(10)^6}$

$$= \frac{9375}{1000000}$$

$$= 0.009375$$

(v) $\dfrac{29}{343}$

➢ $\dfrac{29}{343}$ **has a Non terminating decimal expansion.**

(vi) $\dfrac{23}{(2^3 \times 5^2)}$

$= \dfrac{23}{2^3 \times 5^2} \times \dfrac{5^1}{5^1}$

$= \dfrac{23 \times 5}{2^3 \times 5^3}$

$= \dfrac{115}{(2 \times 5)^3} \left(\because a^m \times b^m = ab^m \right)$

$= \dfrac{115}{(10)^3}$

$$= \frac{115}{1000}$$

$$= 0.115$$

(vii) $\dfrac{129}{(2^2 5^7 7^5)}$

➤ $\dfrac{129}{(2^2 5^7 7^5)}$ **has a Non terminating decimal expansion .**

(viii) $\dfrac{6}{15}$

$= \dfrac{2}{5}$

$= \dfrac{2}{5} \times \dfrac{2}{2}$

$= \dfrac{4}{10}$

$= 0.4$

(viii) $\dfrac{35}{50}$

$$= \dfrac{7 \times \cancel{5}}{\cancel{5} \times 5 \times 2}$$

$$= \dfrac{7}{10}$$

$$= 0.7$$

(x) $\frac{77}{210}$

➢ $\frac{77}{210}$ **has a non-terminating decimal expansion.**

Thanks

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For watching