SCERT Kerala Class 9 Mathematics / Decimal Forms – Chapter 2

Textbook Solutions/ Practice Problems

Answer the following:

1. Write the fractions below in decimal form:

i) $\frac{3}{20}$

ii) $\frac{3}{40}$

iii) $\frac{13}{40}$

iv) $\frac{7}{80}$

v) $\frac{5}{16}$

Solution:

i) $\frac{3}{20} = \frac{3}{20} \times \frac{5}{5} = \frac{15}{100} = 0.15$

ii) $\frac{3}{40} = \frac{3}{40} \times \frac{25}{25} = \frac{75}{1000} = 0.075$

iii) $\frac{13}{40} = \frac{13}{40} \times \frac{25}{25} = \frac{325}{1000} = 0.325$

iv) $\frac{7}{80} = \frac{7}{80} \times \frac{125}{125} = \frac{875}{10000} = 0.0875$

v) $\frac{5}{16} = \frac{5}{16} \times \frac{625}{625} = \frac{3125}{10000} = 0.3125$

2. Find the decimal form of the sums below:

i) $\frac{1}{5} + \frac{1}{25} + \frac{1}{125}$

ii) $\frac{1}{5} + \frac{1}{5^2} + \frac{1}{5^3} + \frac{1}{5^4}$

iii) $\frac{1}{2} + \frac{1}{2^2} + \frac{1}{2^3}$

Solution:

i) $\frac{1}{5} + \frac{1}{25} + \frac{1}{125} = \frac{25}{125} + \frac{5}{125} + \frac{1}{125} = \frac{31}{125} \times \frac{8}{8} = \frac{248}{1000} = 0.248$

ii) $\frac{1}{5} + \frac{1}{5^2} + \frac{1}{5^3} + \frac{1}{5^4} = \frac{5^3}{5^4} + \frac{5^2}{5^4} + \frac{5}{5^4} + \frac{1}{5^4} = \frac{125+25+5+1}{5^4} = \frac{156}{5^4} \times \frac{2^4}{2^4} = \frac{156 \times 16}{10^4} = \frac{2496}{10000} = 0.2496$

iii) $\frac{1}{2}+\frac{1}{2^2}+\frac{1}{2^3}=\frac{2^2}{2^3}+\frac{2}{2^3}+\frac{1}{2^3}=\frac{7}{2^3}\times\frac{5^3}{5^3}=\frac{7\times125}{10^3}=\frac{875}{1000}=0.875$

3. A two digit number divided by another two digit number gives 5.875. What are the numbers?

Solution:

5.875 = $\frac{5875}{1000}=\frac{5\times5\times5\times47}{5\times5\times5\times8}=\frac{47}{8}$ using prime factorisation.

But 8 is not a 2 digit number, so we can multiple by 2 both in numerator and denominator.

$\frac{47}{8}\times\frac{2}{2}=\frac{94}{16}$.