Class IX – Mathematics (Number System)

1. Which of the following rational numbers have terminating decimal representation
   (i)   3/5
   (ii)   40/27
   (iii) 2/13
   (iv)   23/7

2. How many rational numbers can be found between two distinct rational numbers?
   (i) Two   (ii) Ten   (iii) Zero   (iv) Infinite

3. The value of $\left(2 + \sqrt{3}\right)\left(2 - \sqrt{3}\right)$ is
   (i)   1
   (ii)   2
   (iii) -1
   (iv)   none of these

4. $(27)^{-2/3}$ is equal to
   (i)   9
   (ii)   3
   (iii) 1/9
   (iv)   none of these

5. Multiply $\left(3 - \sqrt{5}\right)$ by $\left(6 + \sqrt{2}\right)$

6. Simplify: $\sqrt[3]{2} \times \sqrt[4]{3}$

7. Find two irrational numbers between 2 and 3.

8. Simplify $\left\{\left[625^{-1/2}\right]^{-1/4}\right\}^{2}$

9. Express 0.8888... in the form p/q.

10. Prove that $\dfrac{1}{1+x^{b-a}+x^{c-a}} + \dfrac{1}{1+x^{a-b}+x^{c-b}} + \dfrac{1}{1+x^{a-c}+x^{b-c}} = 1$