STANDARD 8TH: CHAPTER 1

RATIONAL IRRATIONAL NUMBERS

Q1. Select all the write answers.

1. The square root of a perfect square is always:

(a) Rational
(b) Irrational
(c) Prime
(d) Whole

2. *(3-√3)(3+√3) is _____*

(a) Irrational
(b) Rational
(c) Prime
(d) Whole

3. $(16)^{\frac{3}{4}}$ is equal to_____.

(a) $\sqrt[3]{512}$
(b) 4
(c) 16
(d) 8

4. The square root of which number is rational

(a) 7
(b) 1.96
(c) 0.04
(d) 13

5. The value of $\dfrac{1}{\sqrt{10}}$ when $\sqrt{10} = 3.162$ is

(b) 31.62

(c) 31.62%

(d) 316.2

6. The decimal expansion of number $\dfrac{441}{2^5 \times 5^3 \times 7}$ has:

(a) a terminating decimal

(b) non − terminating but repeating

(c) non − terminating non repeating

(d) terminating after two places of decimal

7. The decimal expansion of the rational number $\dfrac{14587}{1250}$ will terminate after

(a) one decimal place

(b) two decimal places

(c) three decimal places

(d) four decimal places

8. Rational number/numbers between $\sqrt{2}$ and $\sqrt{3}$ is/are

(a) 1.5

(b) $\dfrac{14}{9}$

(c) $\sqrt{2.5}$

(d) $(1.2)^2$

9. $\sqrt{12} \times \sqrt{15}$ is equal to:

(a) 6

(b) $6\sqrt{5}$

(c) $5\sqrt{6}$

(d) $\sqrt{180}$

10. What would be the denominator after rationalizing $\dfrac{7}{5\sqrt{3} - 5\sqrt{2}}$

(a) 125
(b) 225
(c) $5\sqrt{5}$
(d) $6\sqrt{5}$

Q2: Solve the following

1. Prove that $\sqrt[3]{2} + \sqrt[3]{3}$ is irrational.

2. Find the prime factorization of the denominator of rational number expressed as $6.\overline{12}$ in simplest form

3. The product of two rational numbers is 48/5. If one of the rational number is 66/7, find the other rational number.

4. Rationalise Denominator:
$$\dfrac{14}{\sqrt{108} - \sqrt{96} + \sqrt{192} - \sqrt{54}}$$

5. Four siblings ordered an extra-large pizaa. Amit ate $\dfrac{1}{5}$, Rita $\dfrac{1}{3}$, and Siya $\dfrac{1}{4}$ of the pizza. Vinya got the leftovers. What is the sequence of the siblings in decreasing order of the part of pizza they consumed?

6. A bowl is formed by attaching four regular hexagons of side 1 to a square of side 1. The edges of the adjacent hexagons coincide, as shown in the figure. What is the area of the octagon obtained by joining the top eight vertices of the four hexagons, situated on the rim of the bowl?
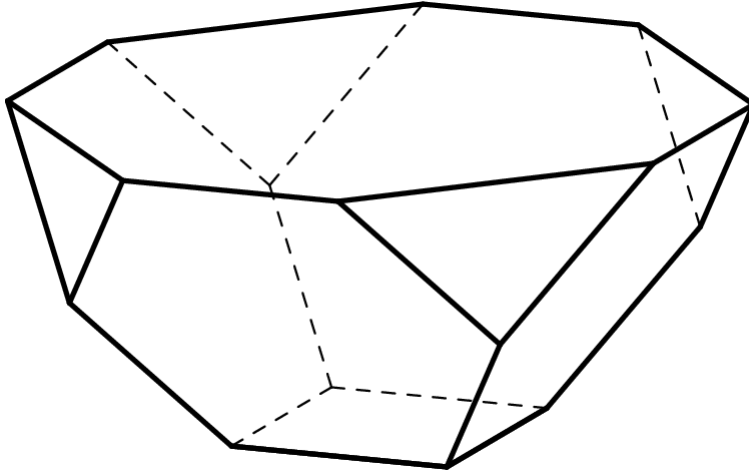
7. Find the sum of 0.2 and 0.50.2 and 0.5 in rational form

8. Find 5 rational numbers between $\dfrac{3}{4}$ and $\dfrac{4}{5}$.

9. Express $-\dfrac{25}{100}$ as a rational number with denominator 20.

10. Express each of the following rational numbers to the simplest form.

    a. $\dfrac{91}{-364}$ b. $\dfrac{90}{165}$