

Rational and Irrational Number**Lecture sheet – 5****Solution**

1. Determine the square root of the following fractions:

a) $\frac{1}{64}$ b) $\frac{49}{121}$ c) $11\frac{97}{144}$ d) $32\frac{241}{324}$

Solution:

a) Square root of $\frac{1}{64} = \sqrt{\frac{1}{64}} = \frac{1}{8}$

∴ Required square root = $\frac{1}{8}$

Ans: $\frac{1}{8}$.

b) Square root of $\frac{49}{121} = \sqrt{\frac{49}{121}} = \frac{7}{11}$

∴ Required square root = $\frac{7}{11}$

Ans: $\frac{7}{11}$.

c) Square root of $11\frac{97}{144} = \sqrt{11\frac{97}{144}}$

$$= \sqrt{\frac{1681}{144}}$$

$$= \frac{41}{12}$$

$$= 3\frac{5}{12}$$

∴ Required square root = $3\frac{5}{12}$

Ans: $3\frac{5}{12}$.

d) Square root of $32\frac{241}{324} = \sqrt{32\frac{241}{324}}$

$$= \sqrt{\frac{10609}{324}}$$

$$= \frac{103}{18}$$

$$= 5\frac{13}{18}$$

∴ Required square root = $5\frac{13}{18}$

Ans: $5\frac{13}{18}$.

2. Determine the square root upto three decimal places:

a) $\frac{6}{7}$

b) $2\frac{5}{6}$

c) $7\frac{9}{13}$

Solution: a) The square root of $\frac{6}{7}$

$$= \sqrt{\frac{6}{7}}$$

$$= \sqrt{\frac{6 \times 7}{7 \times 7}}$$

$$= \sqrt{\frac{42}{49}}$$

$$= \frac{6.4807}{7}$$

$$= 0.9258 \text{ (approx)}$$

∴ The square root upto three decimal places = 0.926 (approx)

Ans: 0.926 (approx) .

b) The square root of $2\frac{5}{6}$

$$= \sqrt{2\frac{5}{6}}$$

$$= \sqrt{\frac{17}{6}}$$

$$= \sqrt{\frac{17 \times 6}{6 \times 6}}$$

$$= \sqrt{\frac{102}{36}}$$

$$= \frac{10.0995}{6}$$

$$= 1.6832 \text{ (approx)}$$

∴ The square root upto three decimal places = 1.683 (approx)

Ans: 1.683 (approx) .

c) The square root of $7\frac{9}{13}$

$$= \sqrt{7\frac{9}{13}}$$

$$= \sqrt{\frac{100}{13}}$$

$$= \sqrt{\frac{100 \times 13}{13 \times 13}}$$

$$= \sqrt{\frac{1300}{169}}$$

$$= \frac{36.0555}{13}$$

$$= 2.7735 \text{ (approx)}$$

∴ The square root upto three decimal places = 2.774 (approx)

Ans: 2.774 (approx) .