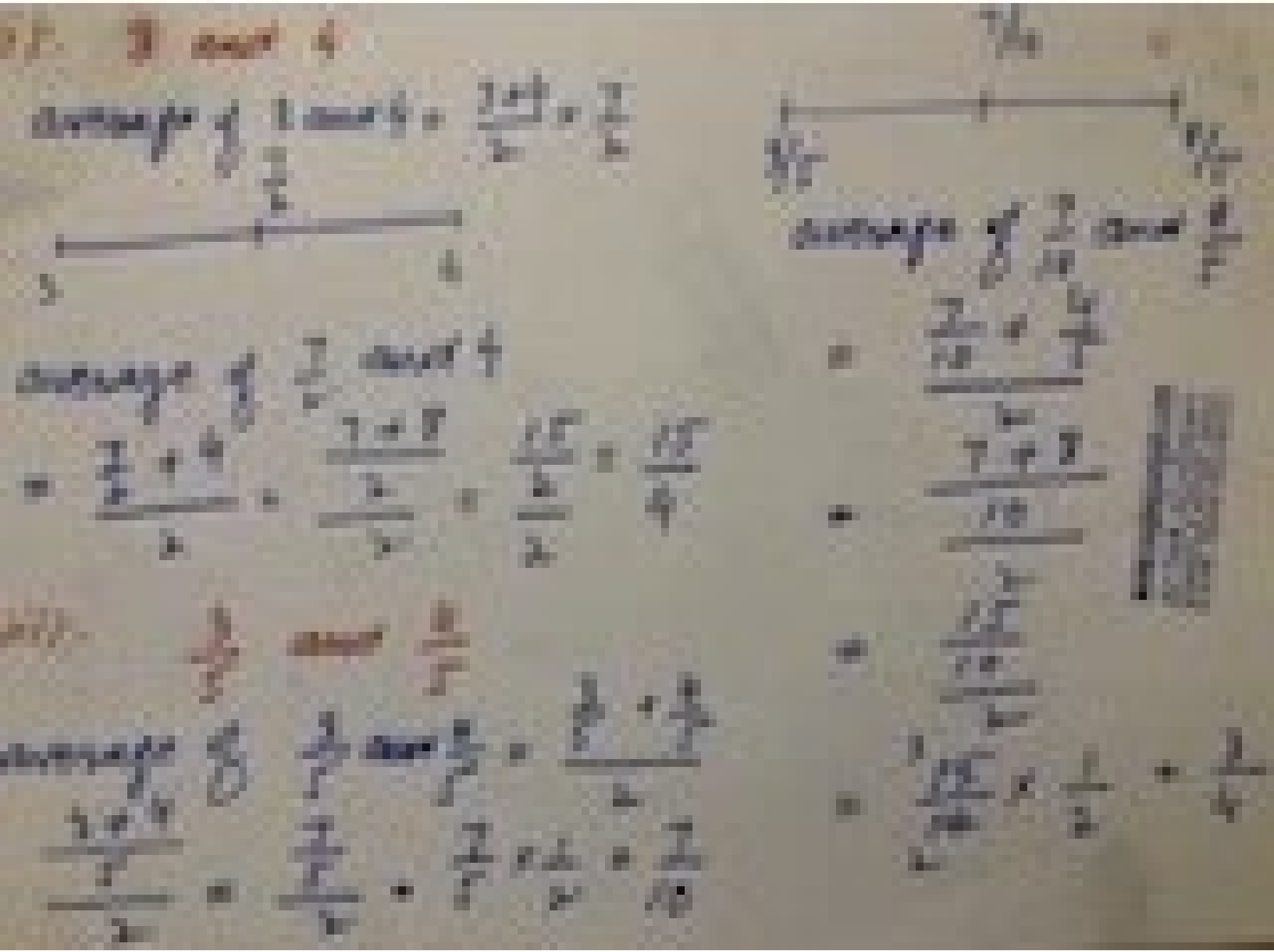


Exercise 1.1

Q1:- Identify each of the following as rational or irrational number.

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i):- 2.353535 Rational Number.

ii):- $0.\overline{6} = 0.6666...$ Rational Number.

iii):- $2.236067.....$ Irrational Number.

iv):- $\sqrt{7}$ Irrational Number.

v):- $e = 2.718281.....$ Irrational Number.

vi):- $\pi = 3.1416.....$ Irrational Number.

vii):- $5 + \sqrt{11}$ Irrational Number.

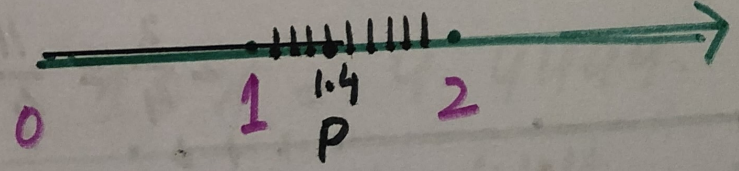
Exercise 1.1

Q2:- Represent the following numbers on number line!

i):- $\sqrt{2} = 1.414....$

$\sqrt{2} \approx 1.4$

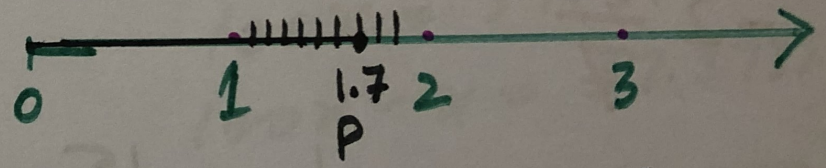
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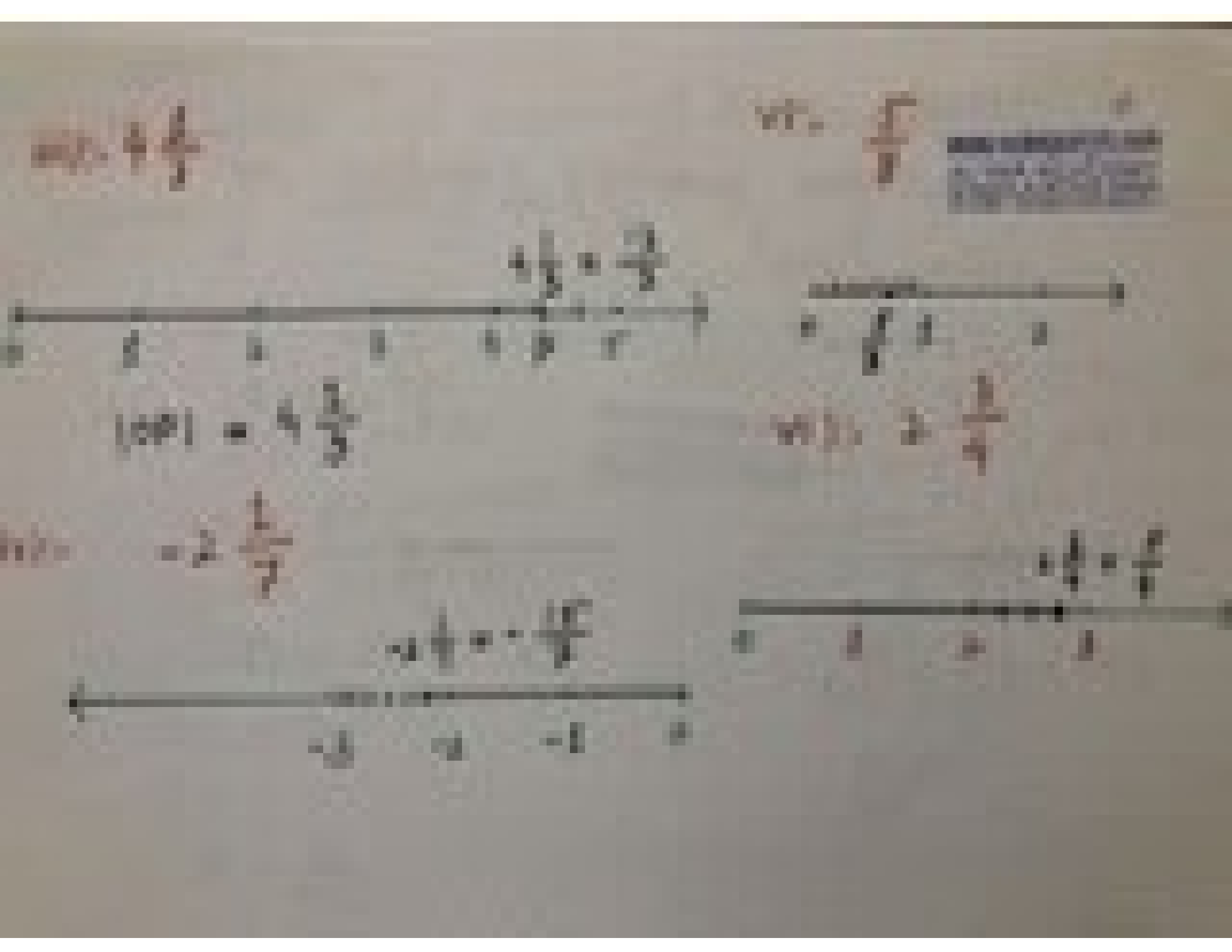
$|OP| = 1.4 \approx \sqrt{2}$

ii):- $\sqrt{3} = 1.732....$

$\sqrt{3} = 1.7$



$|OP| = 1.7 \approx \sqrt{3}$



Q3:- Express the following as a rational number $\frac{p}{q}$, where p and q are integers and $q \neq 0$. 05

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i):- $0.\overline{4}$

Let $x = 0.\overline{4}$

$x = 0.4444.....$

$10x = 10(0.4444....)$

$10x = 4.4444....$

$10x - x = 4.444.... - x$

$9x = 4.444.... - 0.444...$

$9x = 4$

$x = \frac{4}{9}$

ii):- $0.\overline{37}$

Let $x = 0.\overline{37}$

$x = 0.373737...$

$100x = 100(0.373737...)$

$100x = 37.3737....$

$100x - x = 37.3737... - x$

$99x = 37.3737... - 0.3737...$

$99x = 37$

$x = \frac{37}{99}$

Q4:- Name the property used in the following 07

i):- $(a+4)+b = a+(4+b)$

Associative law of addition

ii):- $\sqrt{2}+\sqrt{3} = \sqrt{3}+\sqrt{2}$

Commutative law w.r.t addition.

iii):- $x - x = 0$

Additive inverse

iv):- $16 + 0 = 16$

Additive identity

iv):- $a(b+c) = ab+ac$

Left distributive law of multiplication over addition

vi):- $100 \times 1 = 100$

Multiplicative identity

vii):- $4 \times (5 \times 8) = (4 \times 5) \times 8$

Associative law of multiplication.

viii):- $ab = ba$

Commutative law w.r.t multiplication.

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vii):- Either $a > b$

or $a = b$

or $a < b$

Trichotomy property

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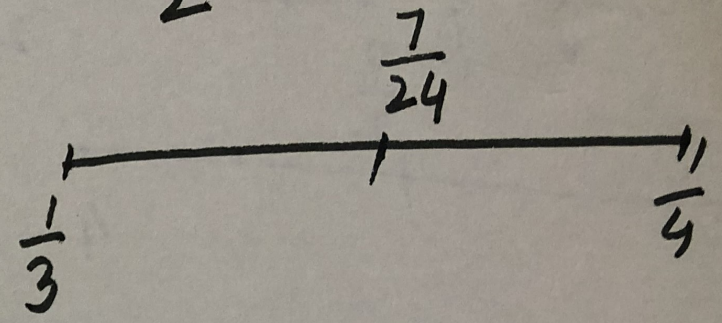
Q6:- Insert two rational numbers.

i):- $\frac{1}{3}$ and $\frac{1}{4}$

average of $\frac{1}{3}$ and $\frac{1}{4}$

$$= \frac{\frac{1}{3} + \frac{1}{4}}{2} = \frac{\frac{4+3}{12}}{2}$$

$$= \frac{\frac{7}{12}}{2} = \frac{7}{24}$$



average of $\frac{7}{24}$ and $\frac{1}{4}$

$$= \frac{\frac{7}{24} + \frac{1}{4}}{2} = \frac{\frac{7+6}{24}}{2}$$

$$= \frac{\frac{13}{24}}{2} = \frac{13}{24} \times \frac{1}{2}$$

$$= \frac{13}{48}$$