

Ex - 1.2

Q1. State whether the following statements are true or false ? Justify your answers.

- (i) Every irrational number is a real number.
- (ii) Every point on the number line is of the form \sqrt{m} , where m is a natural number.
- (iii) Every real number is an irrational number.

Sol. (i) True, since collection of real numbers consists of rationals and irrationals.
 (ii) False, because no negative number can be the square root of any natural number.
 (iii) False, 2 is real but not irrational.

Q2. Are the square roots of all positive integers irrational ? If not, give an example of the square root of a number that is a rational number.

Sol. No, $\sqrt{4} = 2$ is a rational number.

Q3. Show how $\sqrt{5}$ can be represented on the number line.

Sol. $\sqrt{5}$ on Number line.

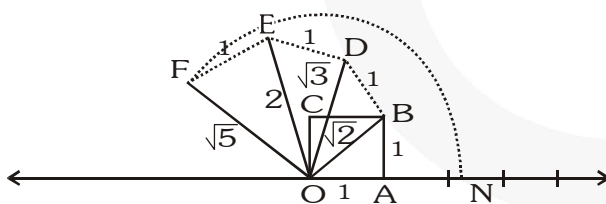
OABC is unit square

So, $OB = \sqrt{1^2 + 1^2} = \sqrt{2}$

$OD = \sqrt{(\sqrt{2})^2 + 1} = \sqrt{3}$

$OE = \sqrt{(\sqrt{3})^2 + 1} = 2$

$OF = \sqrt{(2)^2 + 1} = \sqrt{5}$



Using compass we can cut arc with centre O and radius = OF on number line. ON is required result.