DEPARTMENT OF PUBLIC INSTRUCTION
OFFICE OF THE DEPUTY DIRECTOR OF PUBLIC INSTRUCTION-HAVERI
2020-21 DISTRICT LEVEL SSLC STUDENTS UNTIWISE LIVEWORK SHEET
TOPIC: QUADRATIC EQUATIONS
SUB: MATHEMATICS MEDIUM:ENGLISH(81E)

1. Find the nature of the roots of the equation $3x^2 - 10x + 3 = 0$ without actually solving them.

Solution:

Here the coefficients are rational.

The discriminant= D of the given equation is

$\Delta = b^2 - 4ac$

$= (-10)^2 - 4 \cdot 3 \cdot 3$

$=$ -

$=$ > 0.

Clearly, the discriminant of the given quadratic equation is positive and a perfect square.
Therefore, the roots of the given quadratic equation are .

2. Discuss the nature of the roots of the quadratic equation $2x^2 - 7x + 3 = 0$.

Solution:

Here the coefficients are rational.

The discriminant D of the given equation is

$D = b^2 - 4ac$

$= (\ )^2 - 4 \cdot \ \cdot$

$=$ -

$=$ > 0.

Clearly, the discriminant of the given quadratic equation is positive but not a perfect square.
Therefore, the roots of the given quadratic equation are

3. Find the nature of the roots of the equation $x^2 - 18x + 81 = 0$ without actually solving them.

Solution:

Here the coefficients are rational.

The discriminant D of the given equation is

$D = b^2 - 4ac$

$= (\ )^2 - 4 \cdot \ \cdot \ .$

$=$ -

$=$.

Clearly, the discriminant of the given quadratic equation is zero and coefficient of x^2 and x are rational. Therefore, the roots of the given quadratic equation are .

1 -18 81 324 324 0 real, rational and equal 100 , 64 , 36, real, rational and unequal.

2 -7 49 3 24 25 real, irrational and unequal.