Assignment 1

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1 Question

: Solve the equation $4x^2 - 5x - 3 = 0$ and give your answer correct to 2 decimal places.

SOLUTION: For any kind of equation of the form $ax^2 + bx + c = 0$

It's roots upto two decimals are

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

For the given equation-

$$4x^2 - 5x - 3 = 0 \tag{1}$$

roots are $x1 = \frac{5+\sqrt{(-5)^2-4*4*(-3)}}{2*4}$

$x1 = \frac{5+\sqrt{25+48}}{8}$

$x1 = \frac{5+\sqrt{73}}{8}$

$x1 = \frac{5+8.54}{8}$

$x1 = \frac{13.54}{8}$

$x1 = 1.69$

and

$x2 = \frac{5-\sqrt{(-5)^2-4*4*(-3)}}{2*4}$

$x2 = \frac{5-\sqrt{25+48}}{8}$

$x2 = \frac{5-\sqrt{73}}{8}$

$x2 = \frac{5-8.54}{8}$

$x2 = \frac{-3.54}{8}$

$x2 = -0.44$

The roots of the given equation are 1.69 and -0.44