Homework Assignment X

Student Name
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November 3, 2025

Problem 1

Question: Solve the following equation for x:

$$3x^2 - 7x + 2 = 0$$

Solution: Using the quadratic formula:

$$x = \frac{7 \pm \sqrt{49 - 24}}{6} = \frac{7 \pm 5}{6}$$

Therefore, $x = 2$ or $x = \frac{1}{3}$.

Problem 2

Question: Prove that $\sqrt{2}$ is irrational.

Solution: Assume $\sqrt{2}$ is rational. Then $\sqrt{2} = \frac{p}{q}$ where p, q are integers...

Problem 3

Question: Calculate the following integral:

$$\int_0^{\pi/2} \cos(x) dx$$

Solution:

$$\int_0^{\pi/2} \cos(x) dx = [\sin(x)]_0^{\pi/2} = 1 - 0 = 1$$