

Quiz No.13

student:

Find the solution of the differential equation that satisfies the given initial condition (Pr1-Pr4)

Problem 1: $y' = x + 2$ $y(1) = 5$

Problem 2: $y' = y$ $y(0) = \pi$

Problem 3: $y' = xy + 2y$ $y(0) = 2$

Problem 4: $4yy' = e^{2x}$ $y(0) = \sqrt[4]{2}$

Problem 5: Which of the following first order differential equations are linear:

- a) $y' = e^x + y$
- b) $y' = y + y'^2$
- c) $\sin(y') = \cos(y + x)$
- d) $\frac{1}{y'-y} + \frac{1}{y'+y} = \frac{1}{y'+x}$

Problem 6: 'Separate the variables' in the following first order linear differential equations:

- a) $y' = f(x)$
- b) $y' = y^2$
- c) $y = y'(1 + x)$
- d) $u' = 2 + 2u + t + tu$

Problem 7: Compute the sum $1 + 2 + 3 + \cdots + 100$

Problem 8: What is the next number in the sequence:
 $10, 40, 70, 100, 130, \dots$

Problem 9: What is the next number in the sequence:
 $9, 6, 4, \frac{8}{3}, \dots$

Problem 10: What is the next number in the sequence:
 $1, 1, 2, 3, 5, 8, 13, 21, 34, \dots$