

Worksheet: Linear Programming

Madhya Pradesh State Board · Class 12 · Mathematics · 3 questions · 14 marks

Name: _____

Date: _____

Score: _____ / 14

Q1. Maximise $Z = 3x + 4y$ subject to: $x + y \leq 4$; $x + 2y \leq 6$; $x \geq 0$; $y \geq 0$. [3 marks]

Q2. A factory makes two products A and B. Product A requires 2 hours of machine time and 1 hour of labour; product B requires 1 hour of machine time and 2 hours of labour. Machine time available: 10 hours; labour available: 8 hours. Profit: A gives ₹4 per unit, B gives ₹3 per unit. How many units of A and B maximise profit? [5 marks]

Q3. Minimise $Z = 5x + 10y$ subject to: $x + 2y \leq 20$; $x + y \leq 10$; $x \geq 2y$; $x \geq 0$; $y \geq 0$. [6 marks]