Practice worksheet | Linear models and optimisation

Linear programming

Name: _____ Date: _____

6 questions | 12 marks

1. Maximise $P = 4x + 3y$ for $x, y \geq 0$, $x + y \leq 8$, $x \leq 5$. [2 marks]

2. Maximise $P = 3x + 5y$ for $x, y \geq 0$, $x + y \leq 9$, $x + 2y \leq 14$. [2 marks]

3. Minimise $C = 2x + 5y$ for $x, y \geq 0$, $x + y \geq 6$. [2 marks]

4. Why has $P = x + y$ no finite maximum when only $x, y \geq 0$ is required? [2 marks]

5. A high-profit proposal uses 18 hours when at most 16 are available. Is it acceptable? [2 marks]

6. The optimum for $P = 5x + 3y$ is $(4, 6)$. If P is in hundreds of dollars, interpret the result. [2 marks]