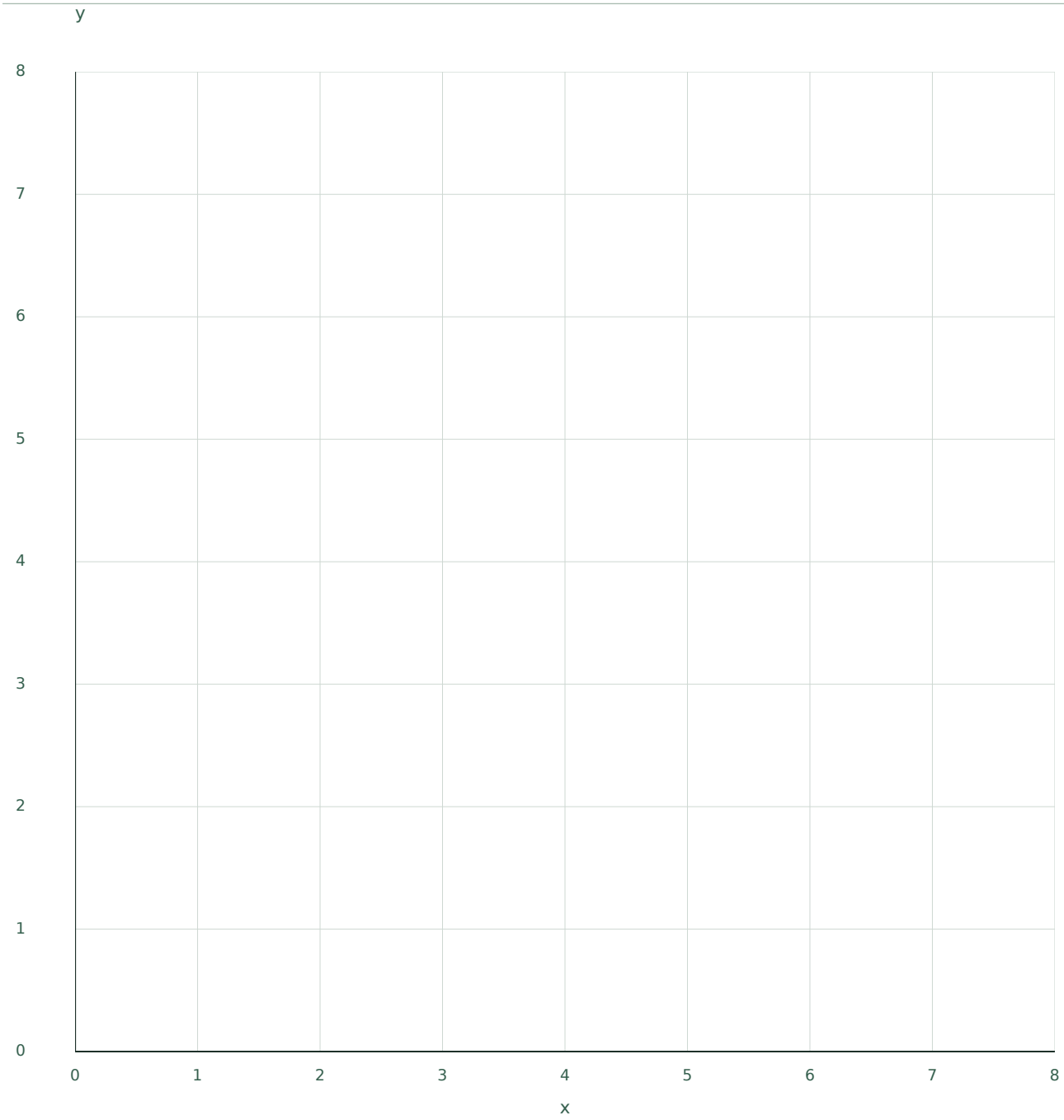
Graph Linear Programming Constraints and Shade the Feasible Region

Student Grid Template: Shade Your Own Feasible Region



Blank grid template for students to shade their own feasible region.

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Linear Programming Worksheet: Workshop Problem

One linear programming word problem with constraint list, blank grid, vertex-testing table, and blanks for objective function evaluation.

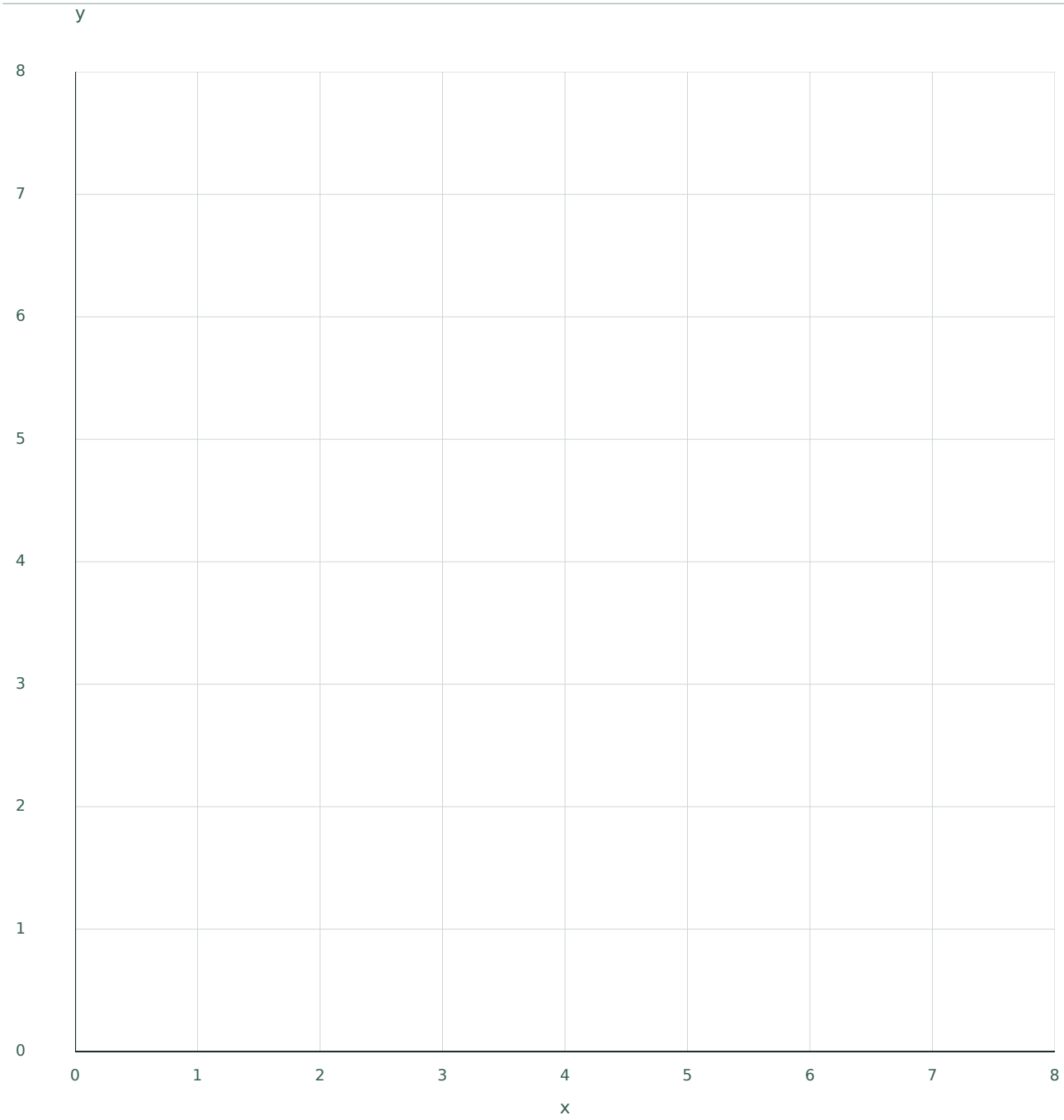
A workshop makes two products, A and B. Each unit of A uses 2 hours of labor and 1 unit of material; each unit of B uses 1 hour of labor and 2 units of material. There are 8 labor hours and 8 material units available. Profit is 3 per unit of A and 2 per unit of B.

Maximize profit subject to $2x + y \leq 8$, $x + 2y \leq 8$, $x \geq 0$, $y \geq 0$, where x is units of A and y is units of B.

Graph the constraints, shade the feasible region, list all vertices, and evaluate the objective function at each vertex. State the optimal vertex and value.

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Worksheet Grid: Graph the Constraints



Blank coordinate grid for graphing the worksheet constraints.

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Worksheet Vertex-Testing Table

Vertex-testing table with columns for vertex, objective value, and decision.

Vertex	Objective Value P = 3x + 2y	Decision

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Worksheet Objective Function Evaluation Blanks

Blanks for objective function evaluation and final answer.

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Original tasks 1, 2, 3 / blank responses

Task 1

Maximize $P = 2x + 3y$ subject to $x + y \leq 4$, $x \geq 0$, $y \geq 0$. Graph the constraints, shade the feasible region, and find the optimal vertex and value.

Task 2

Minimize $C = 4x + y$ subject to $x + y \geq 3$, $x \leq 4$, $y \leq 3$, $x \geq 0$, $y \geq 0$. Graph the constraints, shade the feasible region, and find the optimal vertex and value.

Task 3

Maximize $P = x + 2y$ subject to $2x + y \leq 6$, $x + 2y \leq 6$, $x \geq 0$, $y \geq 0$. Graph the constraints, shade the feasible region, and find the optimal vertex and value.

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Original tasks 4 / blank responses

Task 4

Minimize C = 3x + 2y subject to x + y ≥ 2, x + 3y ≥ 3, x ≥ 0, y ≥ 0. Graph the constraints, shade the feasible region, and find the optimal vertex and value.