



Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

- ✓ Check feasibility against constraints. ✓ Write objective functions. ✓ Write resource constraints.
- ✓ Understand where linear-programming optima occur.



Section A · Concept Check

• BEGINNER

$4 \times 1 = 4$

- Constraint $4x + 5y \leq 100$: is (15, 5) feasible?
☐ A. Yes ($85 \leq 100$) ☐ B. No ☐ C. Only if $x = y$
☐ D. Cannot tell
- Constraint $4x + 5y \leq 100$: is (20, 10) feasible?
☐ A. No ($130 > 100$) ☐ B. Yes
☐ C. Only sometimes ☐ D. Cannot tell
- \$20/unit of A and \$35/unit of B: the objective is:
☐ A. Maximize $P = 20a + 35b$
☐ B. Minimize $P = 20a + 35b$ ☐ C. $P = 55ab$
☐ D. $P = a + b$
- In linear programming, the optimum occurs at:
☐ A. the region's centre
☐ B. a vertex (corner point) ☐ C. any interior point
☐ D. the origin



Section B · Problem Solving

• INTERMEDIATE

$2 + 3 \times 3 = 11$

- A point satisfying all constraints is _____
- $4(15) + 5(5) =$ _____
- Constraint: $4x + 5y \leq 100$. Is (15, 5) feasible?

- Constraint: $4x + 5y \leq 100$. Is (20, 10) feasible?

- \$20 per unit of A and \$35 per unit of B: write the objective function.



Section C · Challenge

• CHALLENGE

5

- Labour ≤ 80 h; A takes 4 h, B takes 8 h. Write the constraint.

Reflection — the most useful thing I learned: _____

A ___/4 B ___/11 C ___/5 Total ___/20

Teacher's Signature

Parent's Signature

1-A 2-A 3-A 4-B | 5 feasible 6 85 7 = Yes, $85 \leq 100$ 8 = No, $130 > 100$ 9 = Maximize P
= $20a + 35b$ | $10 = 4a + 8b \leq 80$