Intro to Linear Programming Notes

Find the maximum and minimum values of the objective function subject to the given constraints.

3rd Plug in "corners"

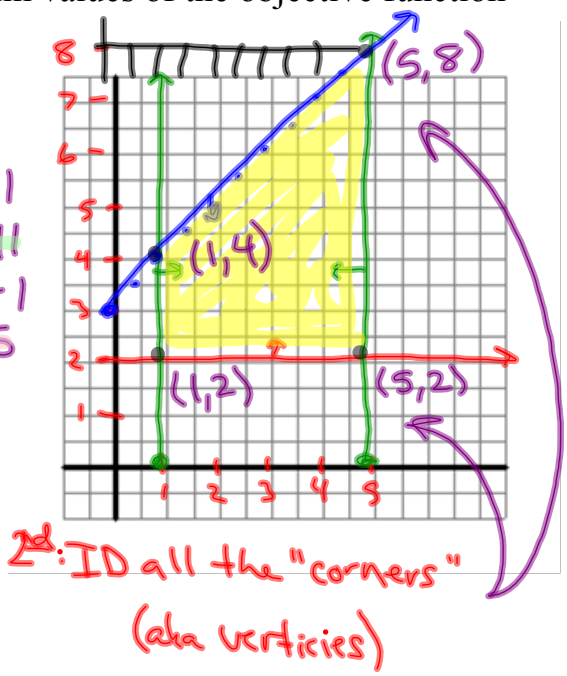
1. Objective Function:
   $F(x, y) = 3x - 2y$

$F(1,2) = 3(1) - 2(2) = -1$
$F(5,2) = 3(5) - 2(2) = 11$
$F(5,8) = 3(5) - 2(8) = -1$
$F(1,4) = 3(1) - 2(4) = -5$

1st graph

Constraints:
- $y \geq 2$
- $1 \leq x \leq 5$
- $y \leq x + 3$

max: 11
min: -5



2nd: ID all the "corners" (aka vertices)

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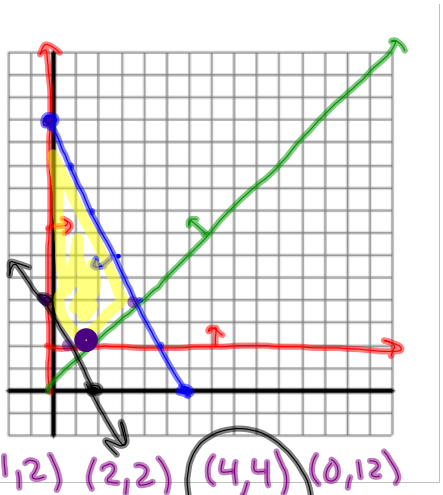
Find the maximum and minimum values of the objective function subject to the given constraints.

2. Objective Function:
   $C = 10x + 3y$

Constraints:
- $x \geq 0$
- $y \geq 2$
- $-x + y \geq 0$
- $2x + y \geq 4$
- $2x + y \leq 12$

$y \geq x$



min
(0,4) 12
(1,2) 16
(2,2) 26
(4,4) 52
(0,12) 36
max

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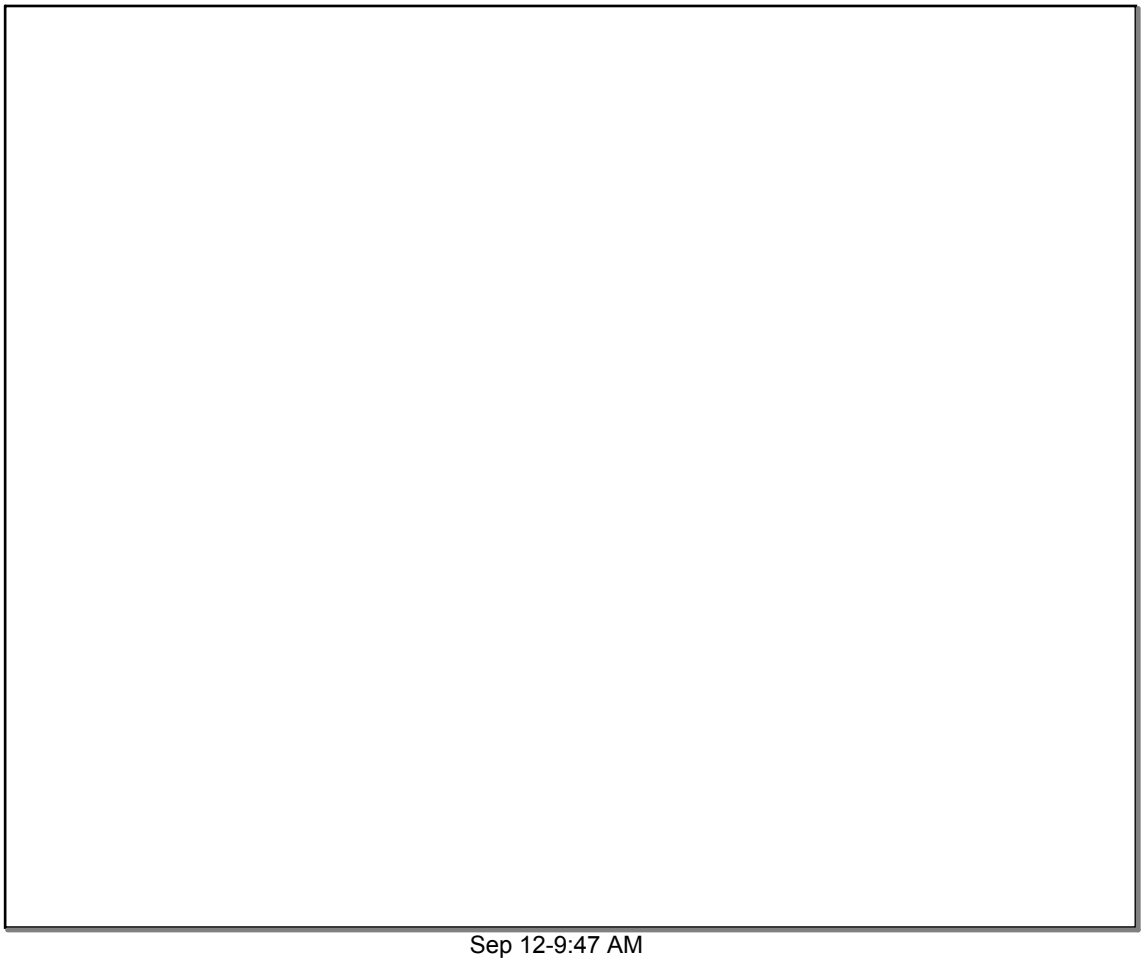

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