Name:

Date:

School:

Facilitator:

2.03 Finding Maximum and Minimum Values

**Read each question carefully and choose the maximum and minimum value for each graph.**

**1.** Maximize the objective function ***P* = 2*x* + 1.5*y*** for the feasible region shown. State the maximum value for *P* and the ordered pair at which the maximum value occurs.



**The maximum value occurs at**       **at the point (**     **,**      **)**

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**2.** Minimize the objective function ***C* = 8*x* + 5*y*** for the feasible region shown. State the minimum value for *C* and the ordered pair at which the minimum value occurs.

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**The minimum value occurs at**       **at the point (**     **,**      **)**

Graph each system of constraints to find the vertices of the feasible region using GeoGebra or by hand. Then find the values of x and y that maximize or minimize the objective function. Find the maximum or minimum value.

3. Constraints:

 *x + y ≤* 12

 *y* ≤ 2*x* + 3

 *x ≥* 0

 *y ≥* 0

 Vertices:

 A(     ,     )

 B(     ,     )

 C(     ,     )

 D(     ,     )

 Maximum for: *P* = 3*x* + 2*y*

 Maximum value of       at x =       and y =

4. Constraints:

 3 ≤ *x* ≤ 9

 4*x* + 3*y* ≥ 48

 *y* ≤ 16

 Vertices:

 A(     ,     )

 B(     ,     )

 C(     ,     )

 D(     ,     )

 Minimum for: *P* = 40*x* + 25*y*

 Minimum value of       at x =       and y =