Unit 2 HW 26

Name_____   Date_____   Period_____
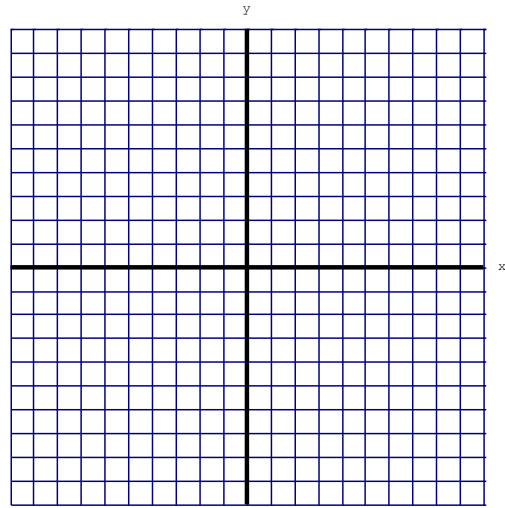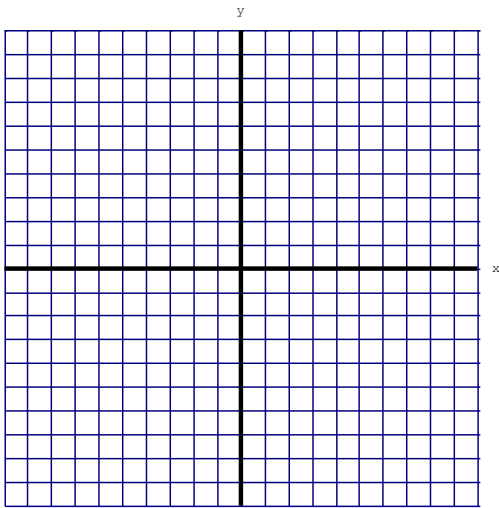
Graph the system of inequalities.

1. $4x + 5y < 15$

$-\dfrac{7}{3}x - y \le -3$
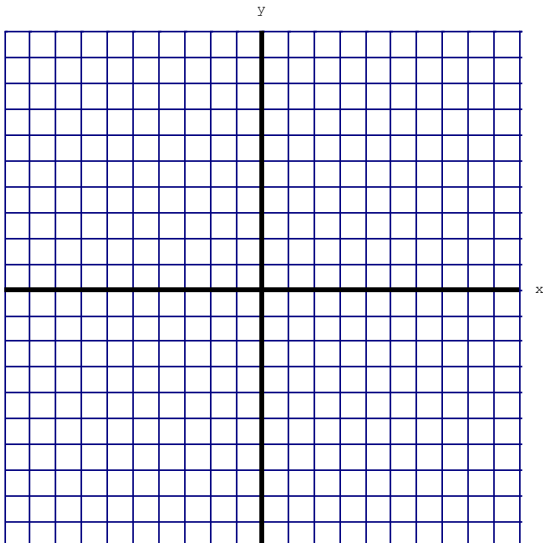
2. $-2x + y \ge -5$

$x < 3$

Simplify.

3. $a^2 b^3 c^4 * ab^5 c^2$

4. $(k^5)^4 (3k)^2$

5. $(3a^3 b^2)^4 (9ab)^2$

6. Solve the system of equations by graphing <u>AND</u> substitution.

$$\begin{cases} -3x + 2y = -6 \\ y = -\dfrac{1}{2}x + 5 \end{cases}$$

7. Mrs. Lucas earns a salary of $24,000 per year plus 1.5% commission on her sales. The average price of a car is $30,500 and "c" represents the number of cars she must sell to make an annual income of at least $40,000. Determine what each of the following represents by using the given inequality and the context of the problem.

$$24{,}000 + 0.015(30{,}500c) \geq 40{,}000$$

a. 24,000: _____

b. 0.015: _____

c. 30,500: _____

d. 30,500c: _____

e. 0.015(30,500c): _____

f. 40,000: _____

For each sequence state if it is arithmetic, geometric, or neither (show work to verify). Then, if it is arithmetic of geometric, write an equation for the sequence.

8. 1, 3, 6, 10, 15, ...

9. 40, 43, 46, 49, 52, ...

10. $4, \frac{13}{3}, \frac{14}{3}, 5, \frac{16}{3}, ...$

11. $-4, 12, -36, 108, -324$