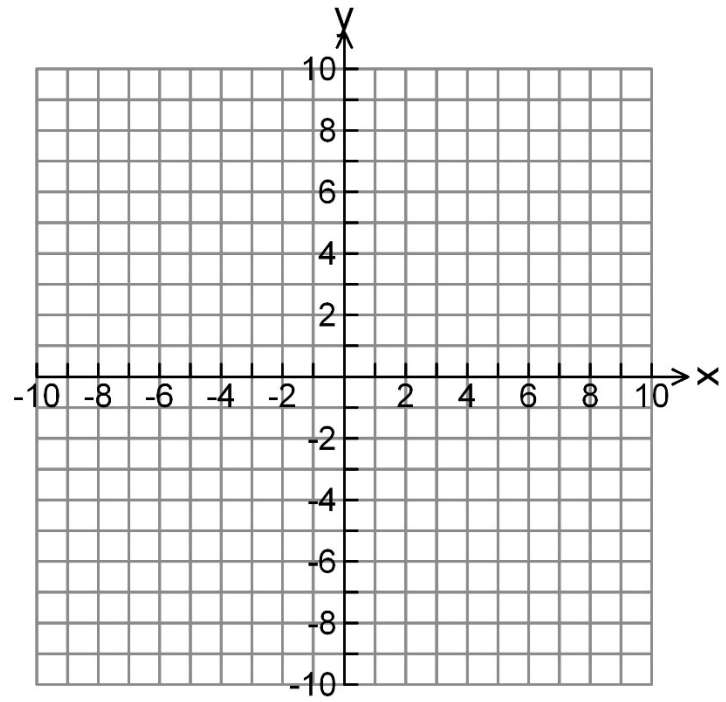**Section 9.6: Systems of Inequalities and Linear Programming**

Video 1

1) Graph $y < 2x - 6$
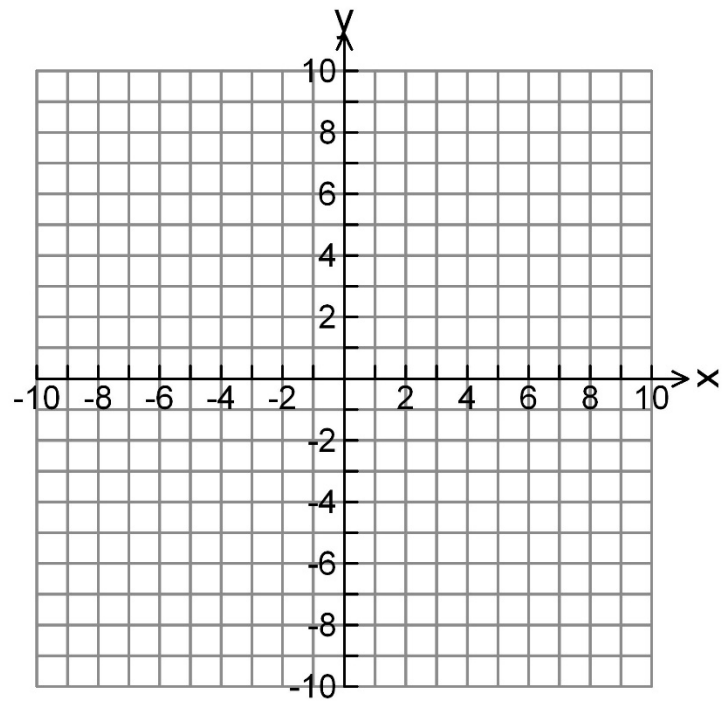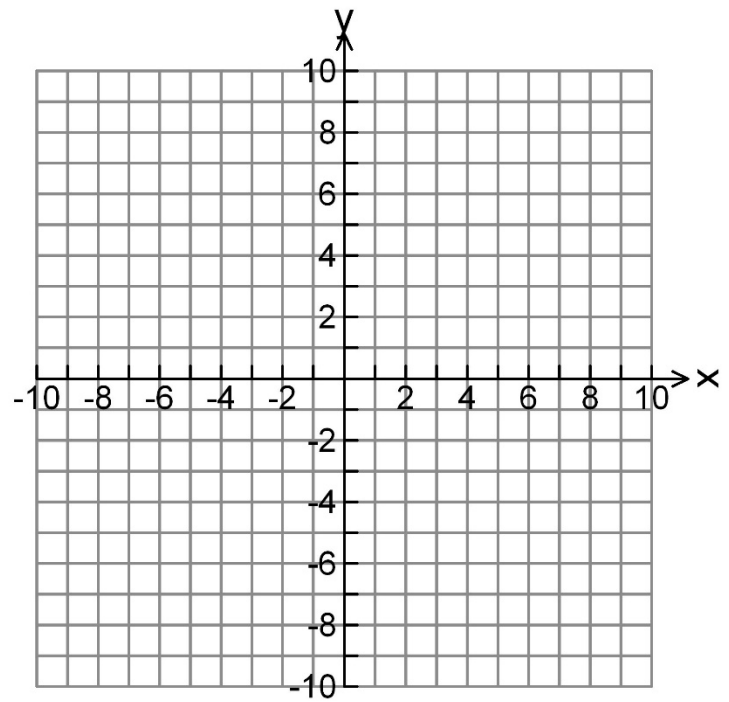
2) Graph $3x - 2y \leq -6$
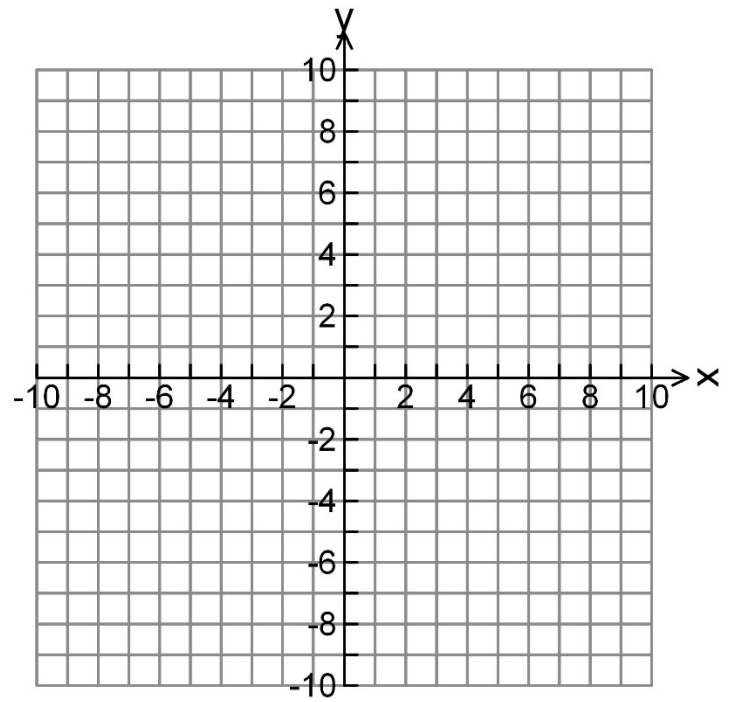
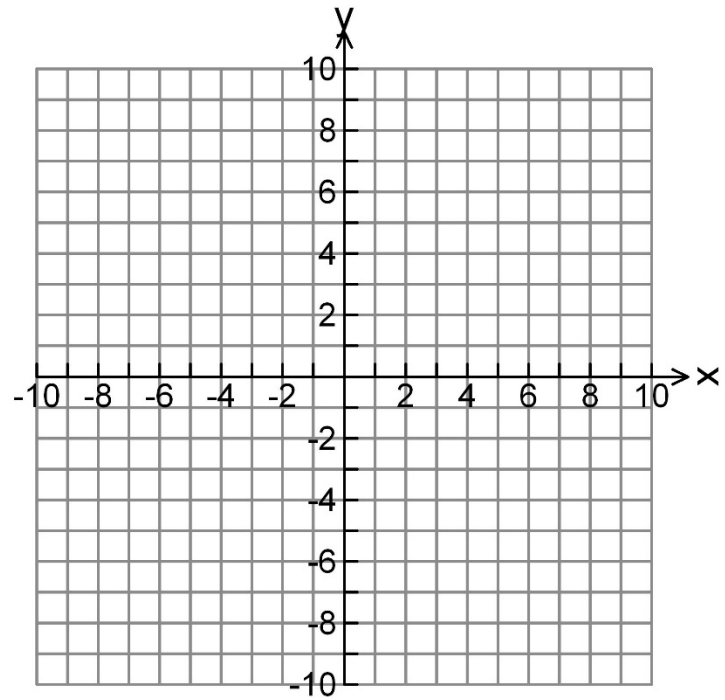**Video 2**

3) Graph $y > (x-3)^2 - 4$

4) Graph $y < |x+4| - 5$

Video 3

5) Graph $y \leq \dfrac{1}{4}x + 2$

$2x + 3y \geq 12$

6) Graph $y > (x-1)^2 + 2$
$y < x + 3$
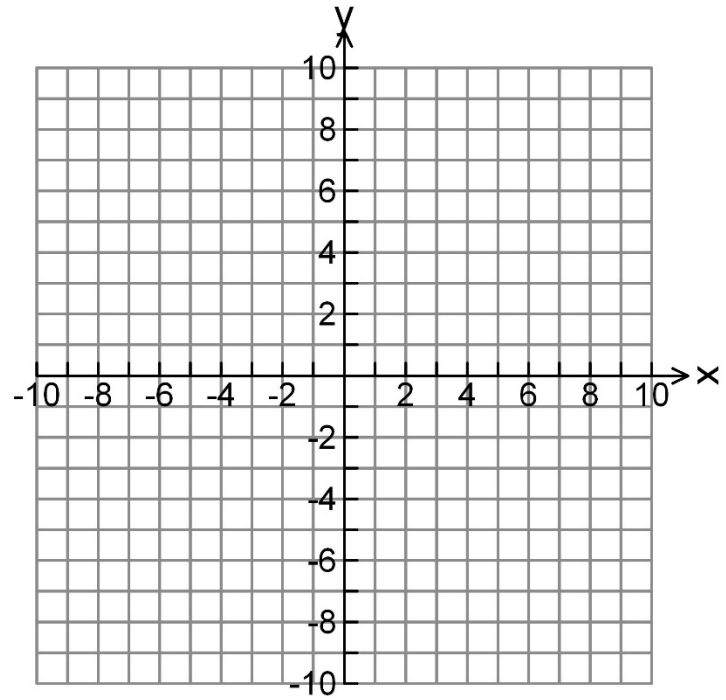
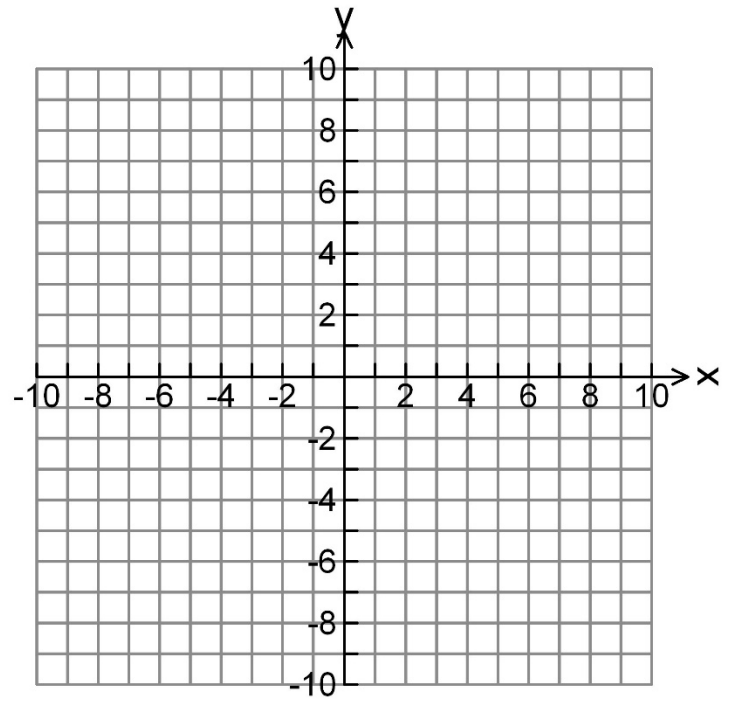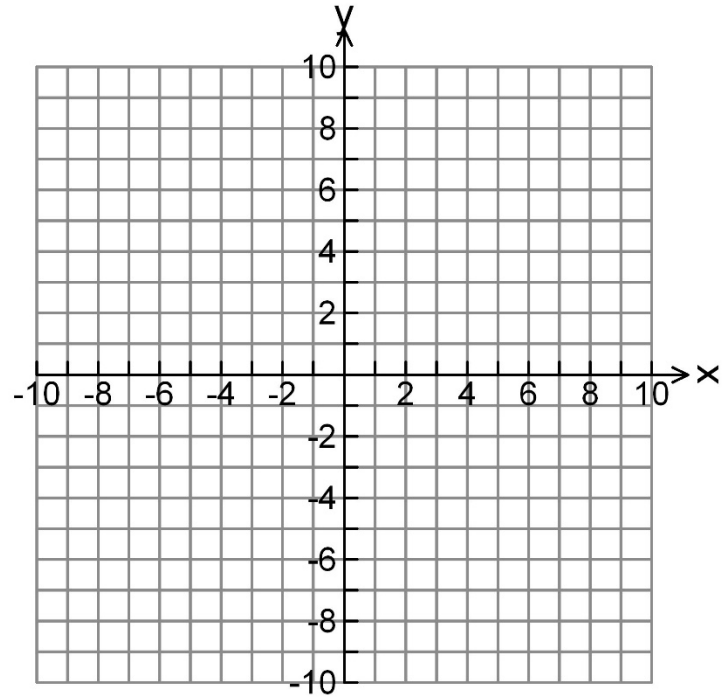7) Graph $|x| \le 4$
$y \le 8$
$y \ge |x+1| + 2$

Video 4 – Linear Programming

8) Find the maximum value of $z = 7x + 4y$ over the feasible region $\begin{array}{l} y \le 2x \\ y \le -2x+4 \\ y \ge x-5 \end{array}$

Video 5 – Linear Programming: Application

9) A baker has a home-based business making cookies and cupcakes, which he sells by the dozen.

When making cookies, he must make at least 6 dozen but cannot make more than 18 dozen.

When making cupcakes, he cannot make more than 12 dozen.

The number of cupcakes he makes cannot be more than half of the number of cookies he makes.

If the baker makes a profit of $4/dozen cookies and $8/dozen cupcakes, how many of each should he make in order to maximize his profit? What is that maximum profit?