Name_____Date_____ Period_____ Score_____
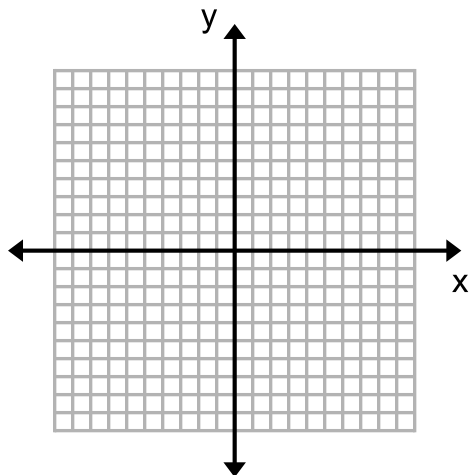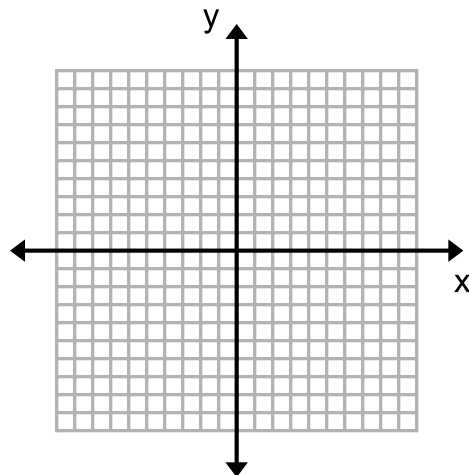
<u>**Secondary 1 Honors**</u>   <u>**Chapter 6 Review Sheet**</u>   <u>**Systems of Equations and Inequalities**</u>
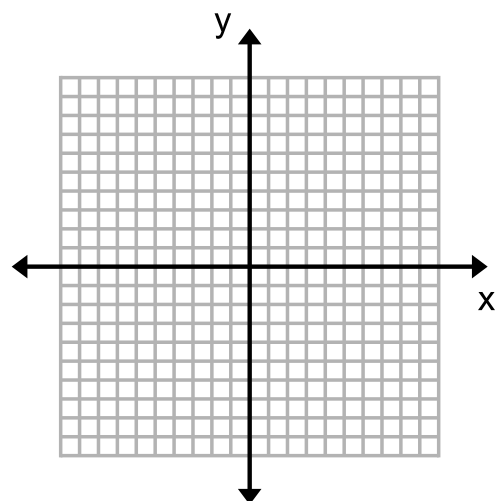
Solve each system by graphing.

1.
$y = -3x + 6$
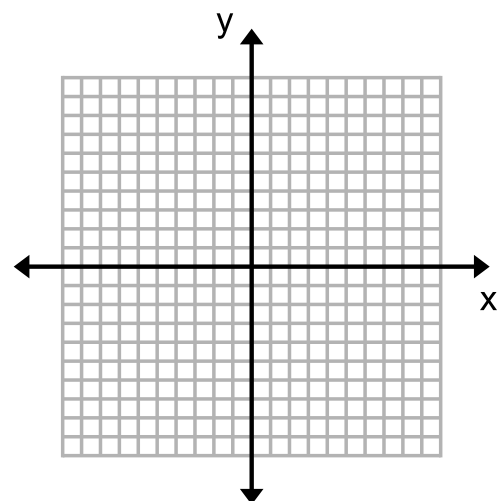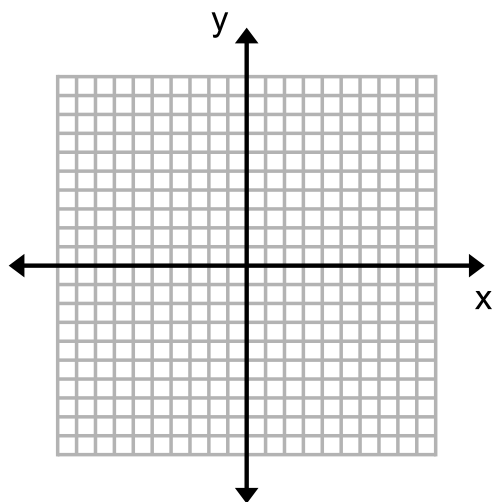$y = x + 2$

2.
$y = -2x - 5$
$y = 2x + 3$

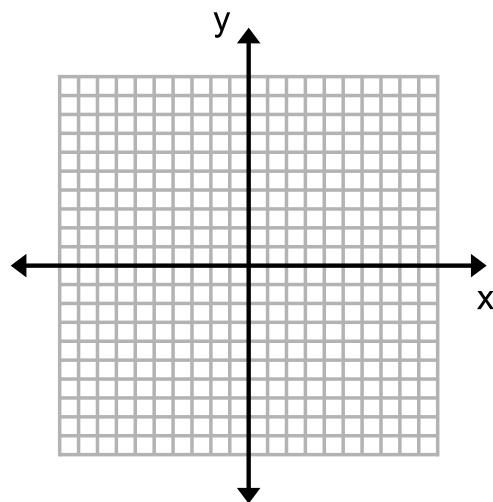

3.
$x - y = 2$
$3y + 2x = 9$

4.
$y = -2x - 3$
$6x + 3y = -18$

5.
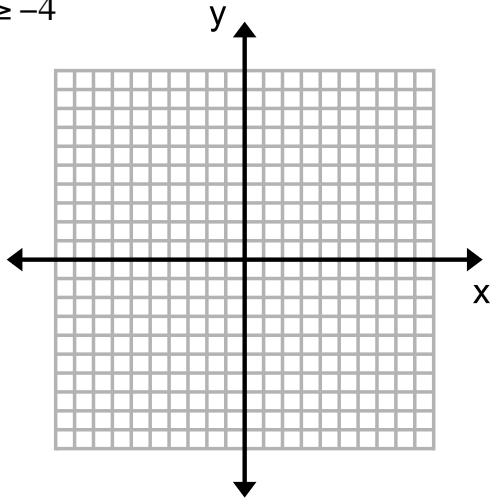$y = 8\left(\dfrac{1}{4}\right)^{x}$
$y = 2$

6.
$y = 4 \bullet 2^{x}$
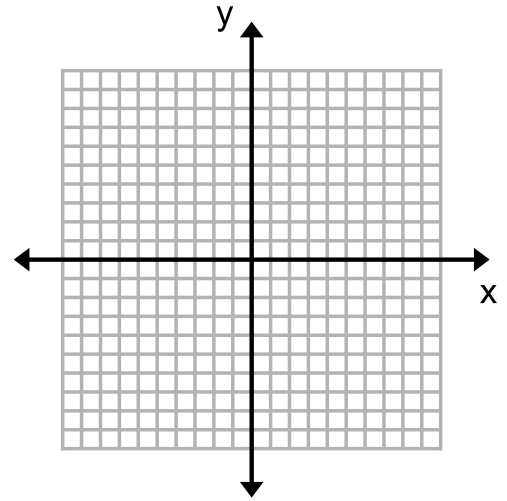$x + y = 1$

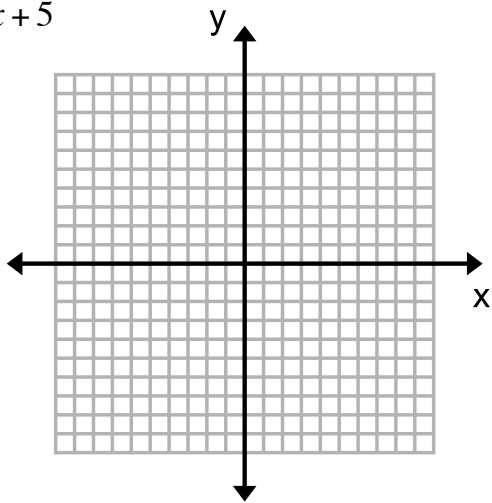**Graph each inequality.**

7.

$x + 2y \geq -4$

8.

$2x - y \leq 6$

9.

$y < 2x - 4$

$y > -3x + 5$

10.

$y \leq \dfrac{1}{2}x - 2$
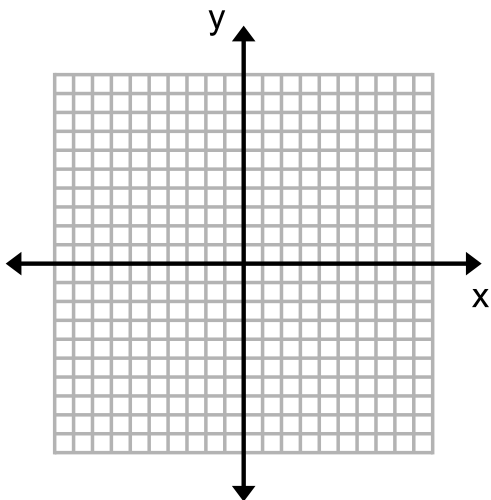
$y \geq -\dfrac{3}{4}x + 4$
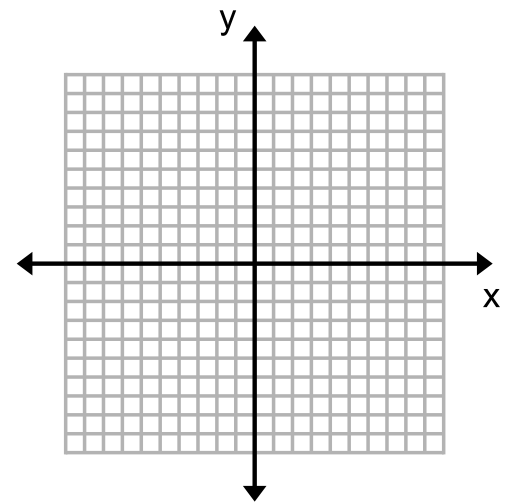
11.

$2x - 3y < 12$

$x + y \geq -2$

12.

$x > 5$

$2x + 4y \leq -10$
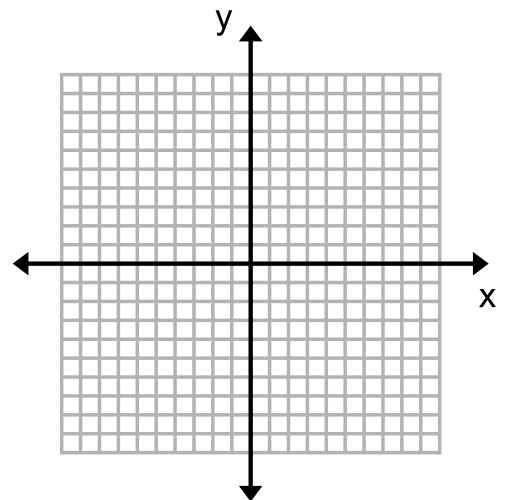
Solve each system by substitution or elimination.

13.
$y = 4x - 6$
$5x + 3y = -1$

14.
$5x + 6y = -8$
$2x + 3y = -5$

15.
$6x - 2y = 10$
$3x - 7y = -19$

16.
$2x + 5y = -1$
$y = 3x + 10$

17.
$y = 2x + 1$
$3x + y = -9$

18.
$x = -2y + 6$
$3x + 6y = 20$

19.
$4x + 2y = 8$
$3x + 3y = 9$

20.
$2x + 3y = 12$
$-4x - 6y = -24$

The graph below shows the amount of two different types of algae in a pond over several years. The line f(x) shows the amount of blue algae, and the line g(x) shows the amount of red algae.

ft³ of algae
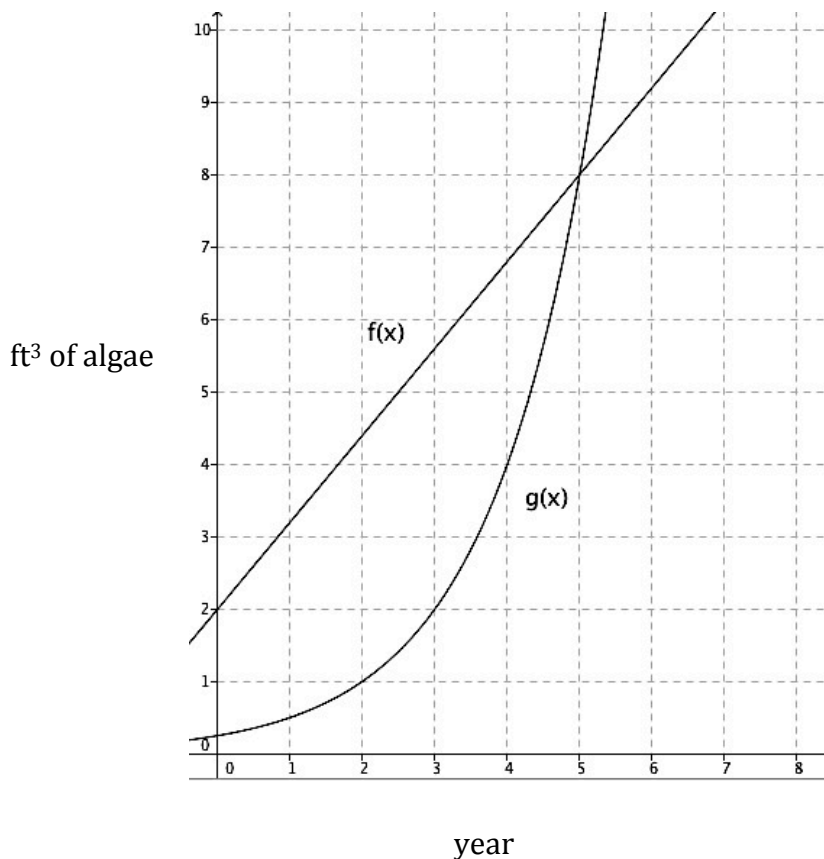
21. What does the point of intersection tell us about the situation?

22. After 8 years which type of algae will there be more of?

year

The graph below shows the prices of stock for two different companies.

value ($) per share

Company A

Company B

weeks

f(x)

g(x)

23. What does the point of intersection tell us about the situation?

24. Which company would you invest in? Why?

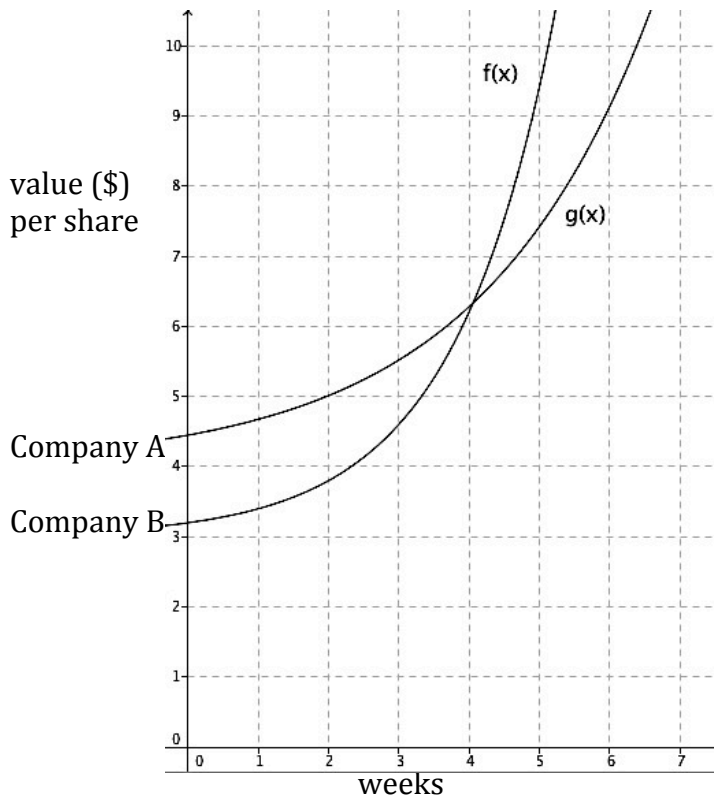**Complete the boxes and answer the questions regarding each situation. Make sure to label.**

25. Jared and Sarah both decided to start a candy store at lunch. Sarah started with $150 and she earns $30 each month from her store. Jared starts with $60 and earns $38 each month.

What do each of the variables represent? x: y:	**Equations:** Jared- Sarah-
Table 	x:	Eq. 1	Eq.2
				Graph-Label lines, axes, intercepts, and intersection point

26. What is the point of intersection? What does the point of intersection represent in the situation?

27. Who has more money after 9 months?

Complete the boxes and answer the questions regarding each situation. Make sure to label.
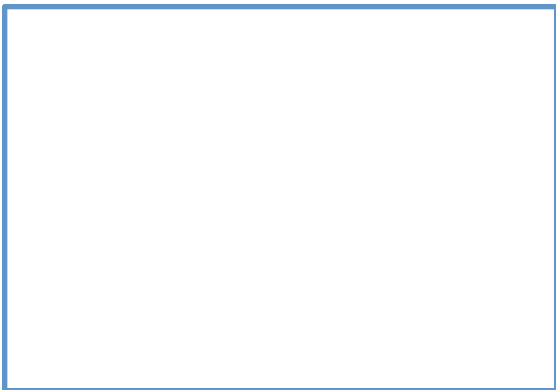
28. You are assigned to buy a uniform for your new job that consists of a shirt and a pair of pants. If you buy the clothes at Walmart, the shirts cost $15 and the pants cost $20 and you have a budget of $180. If you buy the uniforms at Target, the shirts cost $14 and the pants cost $21 but your budget is $175.

What do each of the variables represent? x: y:	**Equations:** Walmart- Target-
Table-must go from x- to y-intercepts and include all whole number values | Equation 1 Ordered Pairs	Equation 2 Ordered Pairs
			Graph-Label lines, axes, intercepts, and intersection point

29. What is the point of intersection? What does the point of intersection represent in the situation?

30. Jack and Mason each start their own pencil selling stand at school. Jack starts with $25. Each month he increases his sales by 10%. Mason starts with $50, and he increases his sales by 4% each month.

What do each of the variables represent? x: y:	**Equations:** Jack- Mason-
Table- round to the nearest cent 	x:	Eq.1	Eq.2
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				Graph-Label lines, axes, intercepts, and intersection point

31. What is the point of intersection? What does the point of intersection represent in the situation?

Complete the boxes and answer the questions regarding each situation. Make sure to label.

32. Kaylee and Tiffany each buy a house. Kaylee bought her house for $200,000 and each year the value of her house increases by 16%. Tiffany bought her house the same year as Kaylee for $600,000 and each year the value increases by $55,000.

| What do each of the variables represent? x: y:	**Equations:** Kaylee- Tiffany-
Table- Fill in the table for ONLY the two x-values where the intersection occurs. Round values to the nearest cent. | x:	Eq.1	Eq.2 | |---|---|---| | | | | | | | | What is the highest y-value you will need in the window?	**Graph-**Label lines, axes, intercepts, and intersection point

33. What is the point of intersection? What does the point of intersection represent in this situation?

Solve by graphing. Draw a sketch of the graph in the best window, including your axes labeled with the Min and Max. Plot the point(s) of intersection on the sketch, round the coordinates to the nearest hundredth if necessary.

34. $f(x) = 5x - 30$ $g(x) = 7x - 45$	35. $f(x) = 2 \bullet (\frac{1}{4})^x + 1$ $g(x) = 6 \bullet 3^x$	36. $f(x) = 2^x + 3$ $g(x) = 4^{x-1}$
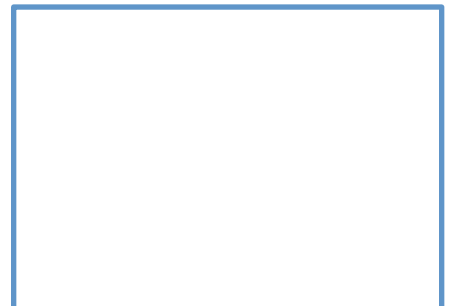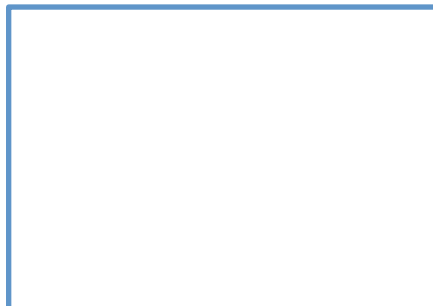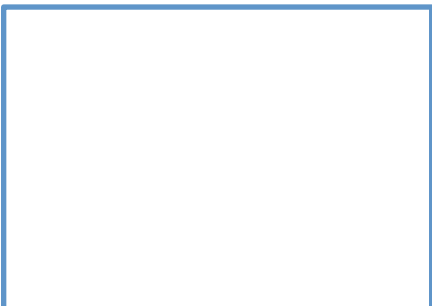
37.

$f(x) = -3x + 8$

$g(x) = (\frac{1}{2})^x + 4$

38.

$f(x) = 5^x - 4$

$g(x) = 8x + 10$

39.

$f(x) = 3^x$

$g(x) = 3^x - 5$