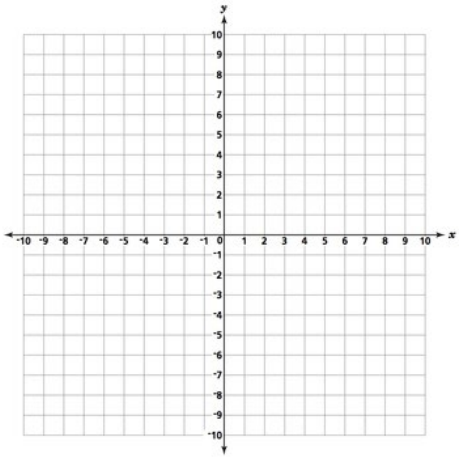
Pre-IB Alg 1 → Pre-IB Geometry (Summer Homework 2021) Name _____

Write the standard form and slope-intercept form of the equation of the line with the given information and graph.

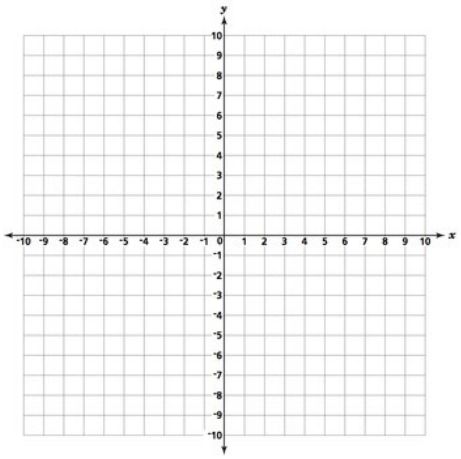
1. $2x - 3y - 14 = 0$



Standard:

Slope-intercept:

2. $\frac{1}{2}y = \frac{3}{8}x + \frac{1}{4}$



Standard:

Slope-intercept:

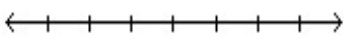
Solve.

3. $-4x - (5x + 6) = -7x + 3$

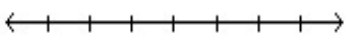
4. $\frac{3}{4}(24 - 8x) = 2(5x + 1)$

Solve each compound inequality and graph the solution. Then give the solution in set notation and interval notation:

5. $8 \leq 2x + 6 \leq 18$

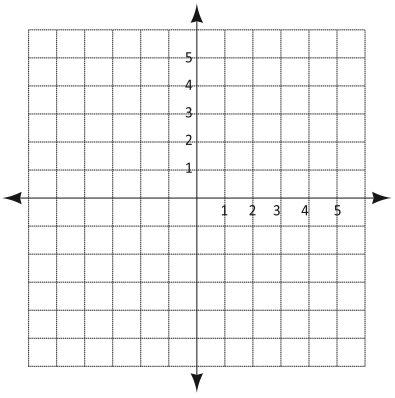


6. $-3x - 7 \geq 8$ or $-2x - 11 < -31$

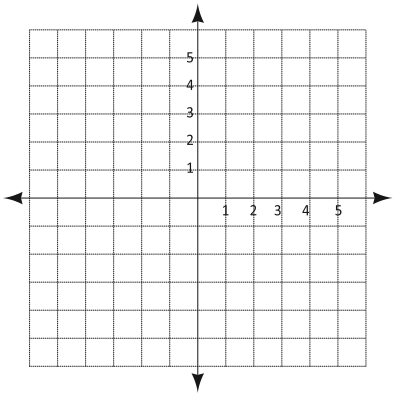


Graph the inequlality.

7. $2x - y > 1$



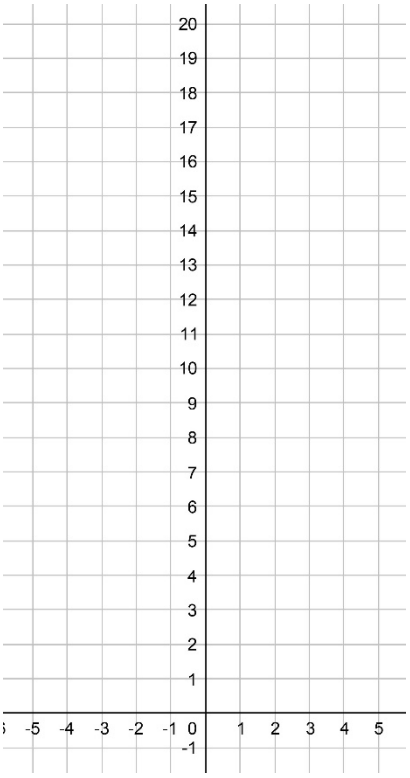
8. $9x - 3y \leq 18$



Sketch the graph of the function using the table and list domain and range and y-intercept.

9. $y = 3^x$

x		f(x)
-2		
-1		
0		
1		
2		
3		



D:

R:

y-int:

For the following tables, a piece of information is given. Complete the rest. Show work.

10.

<table>
<tr><td>Recursive Form</td><td>Explicit Form</td><td>Common Difference or Ratio</td></tr>
<tr><td rowspan="3">Sequence or Table

Fill-in min 3 points

<table><tr><td>x</td><td>$f(x)$</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table></td><td>y-intercept

x-intercept</td><td rowspan="2">Circle One:

Arithmetic

Geometric</td></tr>
<tr><td>Give the domain using each:
<u>Set Notation:</u>

<u>Interval Notation:</u></td><td>Give the range using each:
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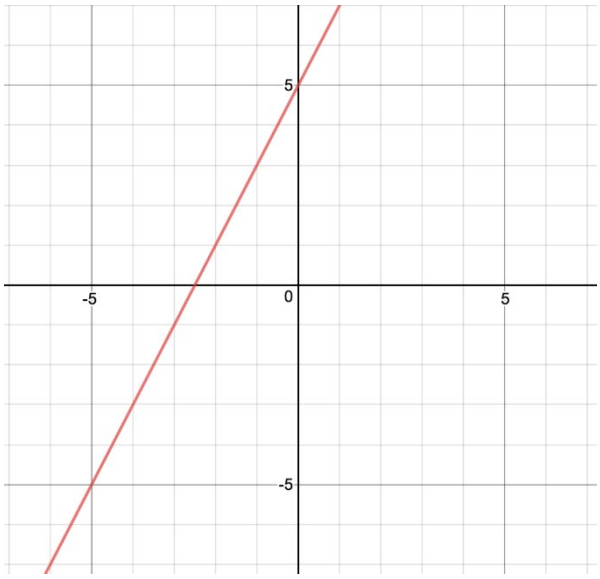

11.

<table>
<tr><td>Recursive Form</td><td>Explicit Form

$y = \frac{1}{2}(x-2)+5$</td><td>Common Difference or Ratio</td></tr>
<tr><td rowspan="2">Sequence or Table

Fill-in min 3 points

<table><tr><td>x</td><td>$f(x)$</td></tr><tr><td>-1</td><td></td></tr><tr><td>0</td><td></td></tr><tr><td>1</td><td></td></tr><tr><td>2</td><td></td></tr><tr><td>3</td><td></td></tr></table></td><td>y-intercept

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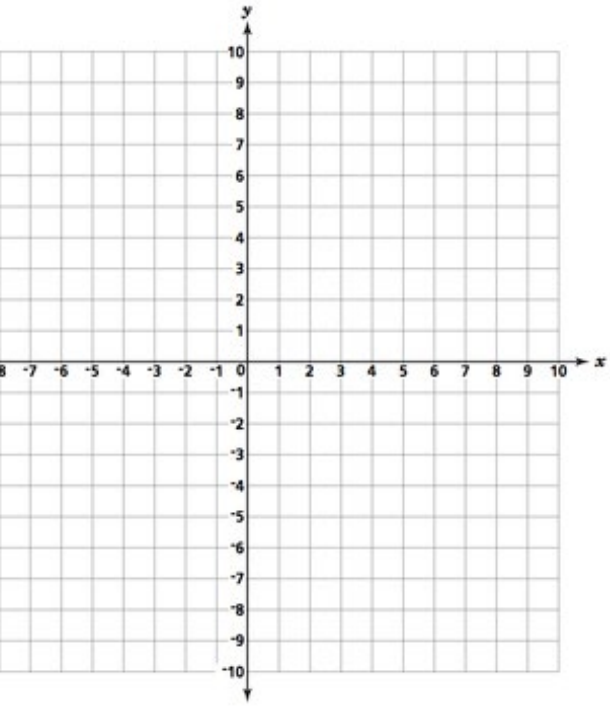

12.

<table>
<tr><td>Recursive Form</td><td>Explicit Form
$y = 2(3)^{x-1}$</td><td>Common Difference or Ratio</td></tr>
<tr><td rowspan="3">Sequence or Table

Fill-in min 3 points

<table><tr><td>x</td><td>$f(x)$</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table></td><td>y-intercept</td><td rowspan="2">Circle One:

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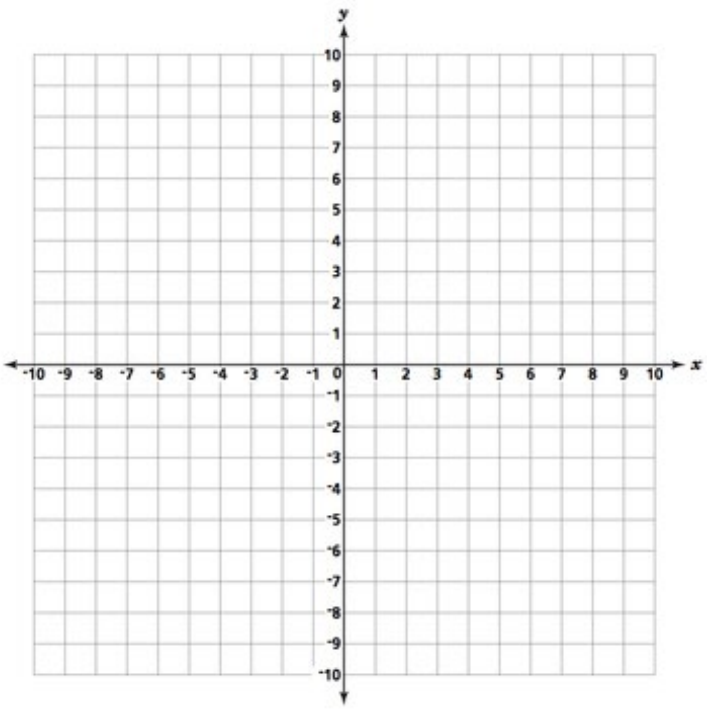


Solve each system of equations using *elimination of a variable*. Check your solution.

13. $\begin{cases} 3x + 2y = 8 \\ 2y = 12 - 5x \end{cases}$

14. $\begin{cases} 5x - y = 3 \\ x + 2y = 5 \end{cases}$

Solve each system of equations using substitution. Check your solution in both equations.

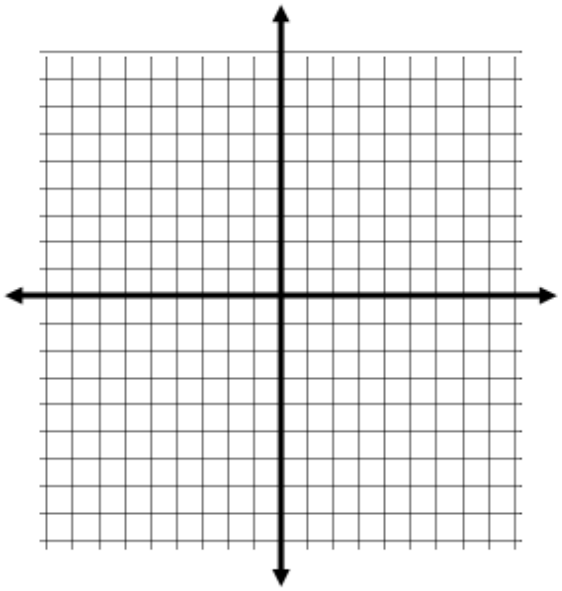
15. $\begin{cases} x = y + 4 \\ 2y + x = 19 \end{cases}$

16. $\begin{cases} 2x + 3y = 31 \\ y = x + 7 \end{cases}$

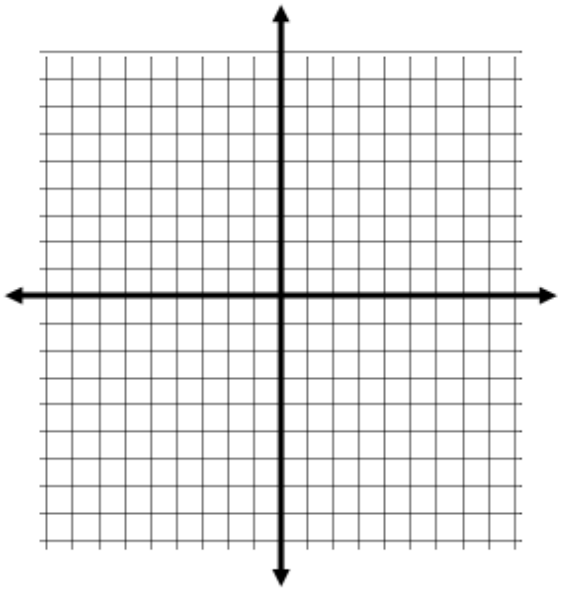
17. A steamboat went 8 miles upstream in 1 hour. The return trip took only 30 minutes. Assume that the speed of the current and direction were constant during both parts of the trip. Find the speed of the boat in still water and the speed of the current.

For each system of inequalities: a. Graph the system. b. Shade the solutions sets for each inequality to find the solution set for the system.

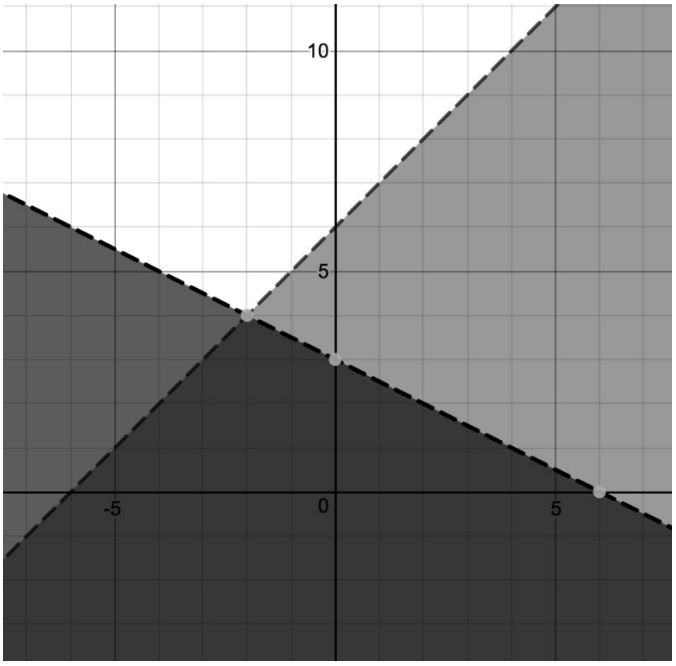
18. $\begin{cases} x - 2y < -6 \\ 5x - 3y \leq -9 \end{cases}$



19. $\begin{cases} y + 2 < -x \\ 2y - 4 > 3x \end{cases}$



20. Use the graph to write the system of inequalities that represents the shaded region.



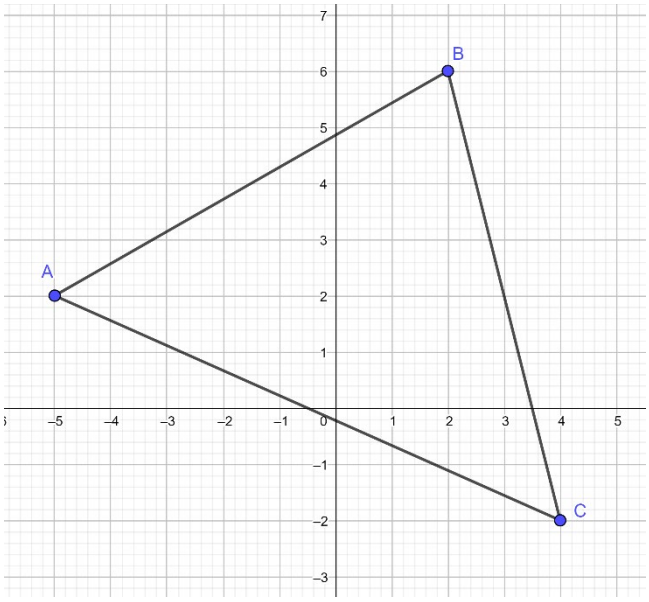
Use the diagram to answer the questions below.

21. Find lengths below in exact form and decimal to the tenths place.

$AB =$

$BC =$

$AC =$



22. What is the perimeter of ΔABC rounded to the hundredths place?

23. Find the slope-intercept form of $\overleftrightarrow{AB}$.

24. Find the slope-intercept form of $\overleftrightarrow{BC}$.

25. Are $\overleftrightarrow{AB}$ and $\overleftrightarrow{BC}$ perpendicular? Why?

26. What is the midpoint of $\overline{BC}$?

27. What is the slope-intercept form of the perpendicular bisector of $\overline{BC}$?

28. Simplify the expression $(2p^2 + 2 - 5p) - (6p^3 + 6p^2 + 5p) + (8p^2 + 6)$

Find each product.

29. $(2k + 2)(k - 6)$

30. $(7p - 1)(5p + 4)$

31. $(2k^2 - 6k - 6)(k^2 + 5k - 3)$

32. $(7b^2 + 2b + 8)(6b^2 - 5b + 7)$

Factor Completely.

33. $x^2 + 4x - 12$

34. $x^2 - 6x - 7$

35. $x^2 - x$

36. $x^2 + 6x + 9$

37. $9x^2 - 16$

38. $3x^2 + 16x + 5$

39. $6x^2 + x - 70$

40. $3x^2 - 30x + 75$

Simplify.

41. $\sqrt{125}$

42. $\sqrt{48}$

43. $\sqrt{27}$

44. $2\sqrt{200x}$

45. $8\sqrt{72x^2}$

46. $\sqrt{75x^5}$