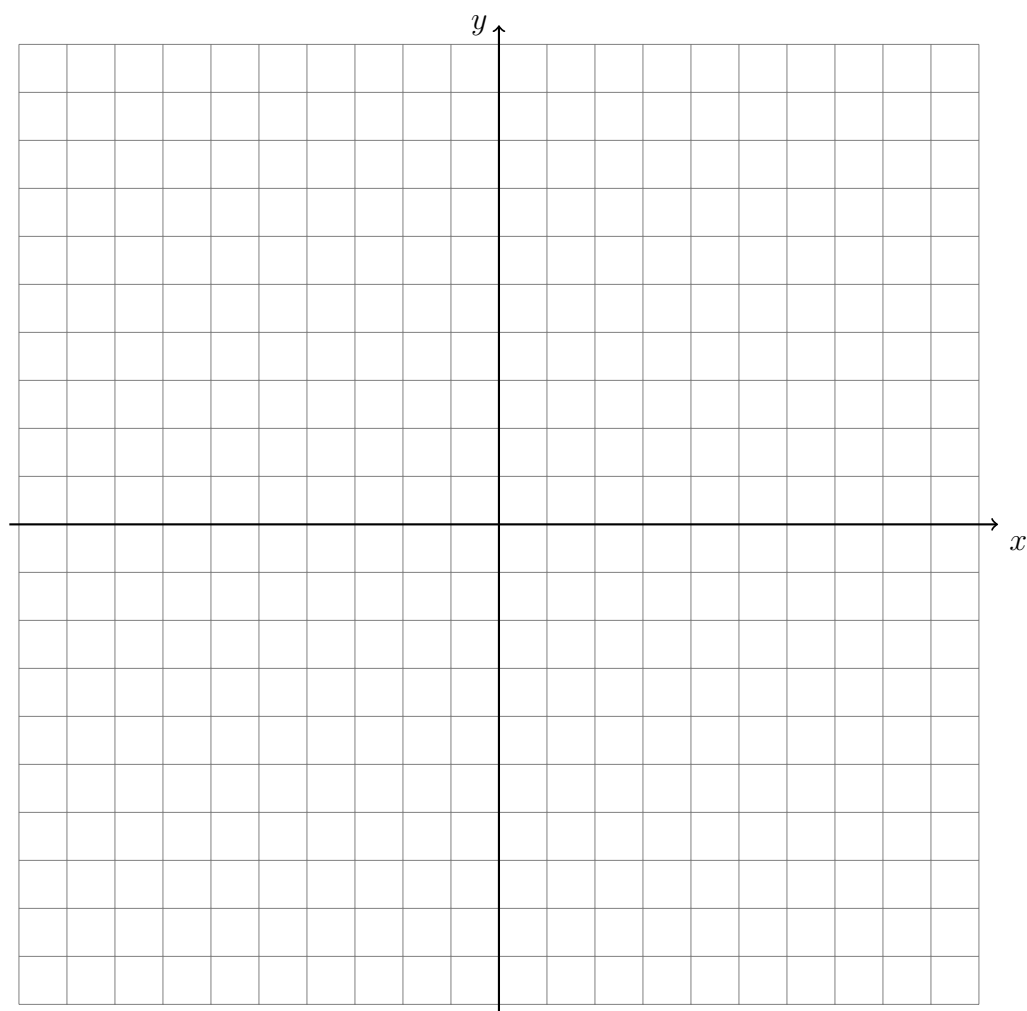**8-13 Homework: Graphing inequalities algebra review**

For graphs, use a pencil and straight edge. Label each line.

1. Solve for y, then graph the two inequalities.

$y > \frac{3}{4}x - 5$ $2x + y \geq 6$

Mark the solution set with a capital "S". Is the point $(8, 1)$ a solution? Justify your answer.

2. Does the table represent a linear function? Justify your answer.

x	$f(x)$
-1	3
0	5
1	0
2	2
3	4

3. Given $f(x) = -2x + 11$. Simplify $f(3.5)$.

4. Find $g(x) = \frac{1}{3}x - 2$ for $x = 6$.

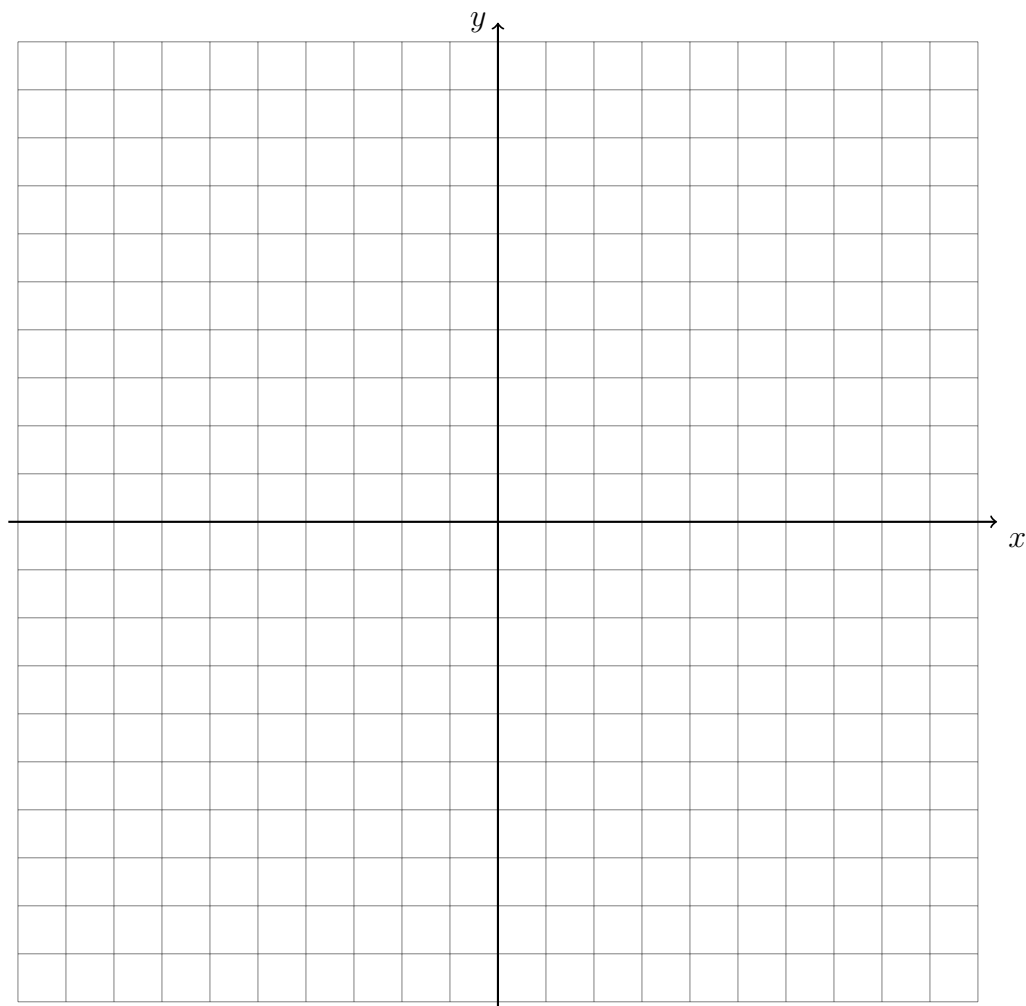5. Given $h(x) = \dfrac{2x + 3}{7}$. Evaluate the expression $h(-5)$.

Skills Tracker: Graphing systems and inequalities

Use pencil for graph (1 point)

1. Solve for y, then graph the two lines. Label both lines and the solution to the system, the intersection, as a coordinate pair. (3 points)
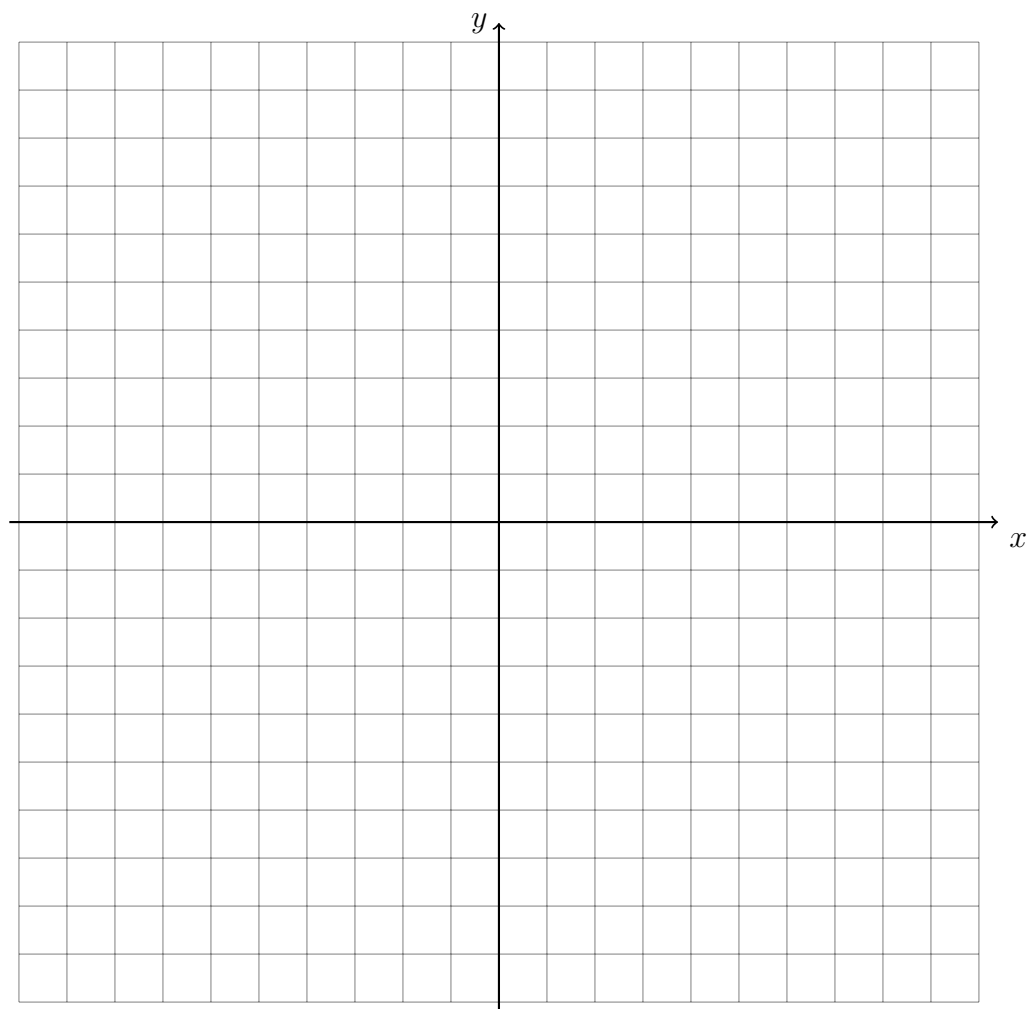
$$y = -3x - 2 \qquad\qquad\qquad x - 2y = -10$$

2. Solve for y, then graph the two inequalities. Mark the solution set with a capital "S."

$y < -\frac{2}{3}x + 5$ $2x + y \geq -3$

Determine and state whether the point $(-4, 1)$ is a solution of the system of inequalities. Justify your answer.

Do Now: Graphing inequalities

Show your work. For graphs, use a pencil and straight edge. Graph the inequality after filling in the values in the blanks and circling the correct types.
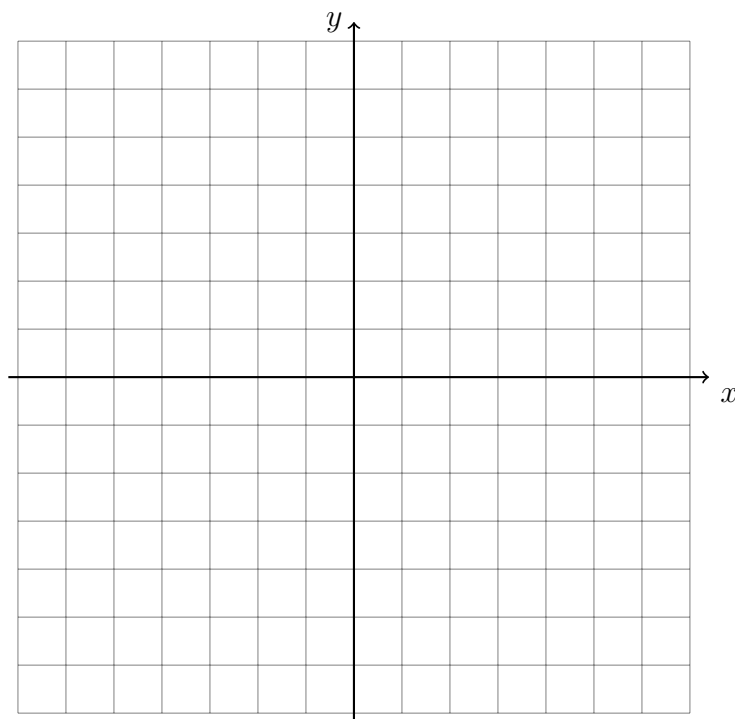
1. $\dfrac{3}{2}x - 2y \leq +2$

   y-intercept $b =$ _____   Line: Solid $(=)$ Dashed $(\neq)$

   Slope $m =$ _____   Shading: Above $(y >)$ Below $(y <)$

2. Solve for y, then complete. $\dfrac{3}{2}x - 3y \geq 6$

   y-intercept $b =$ _____   Line: Solid $(=)$ Dashed $(\neq)$

   Slope $m =$ _____   Shading: Above $(y >)$ Below $(y <)$

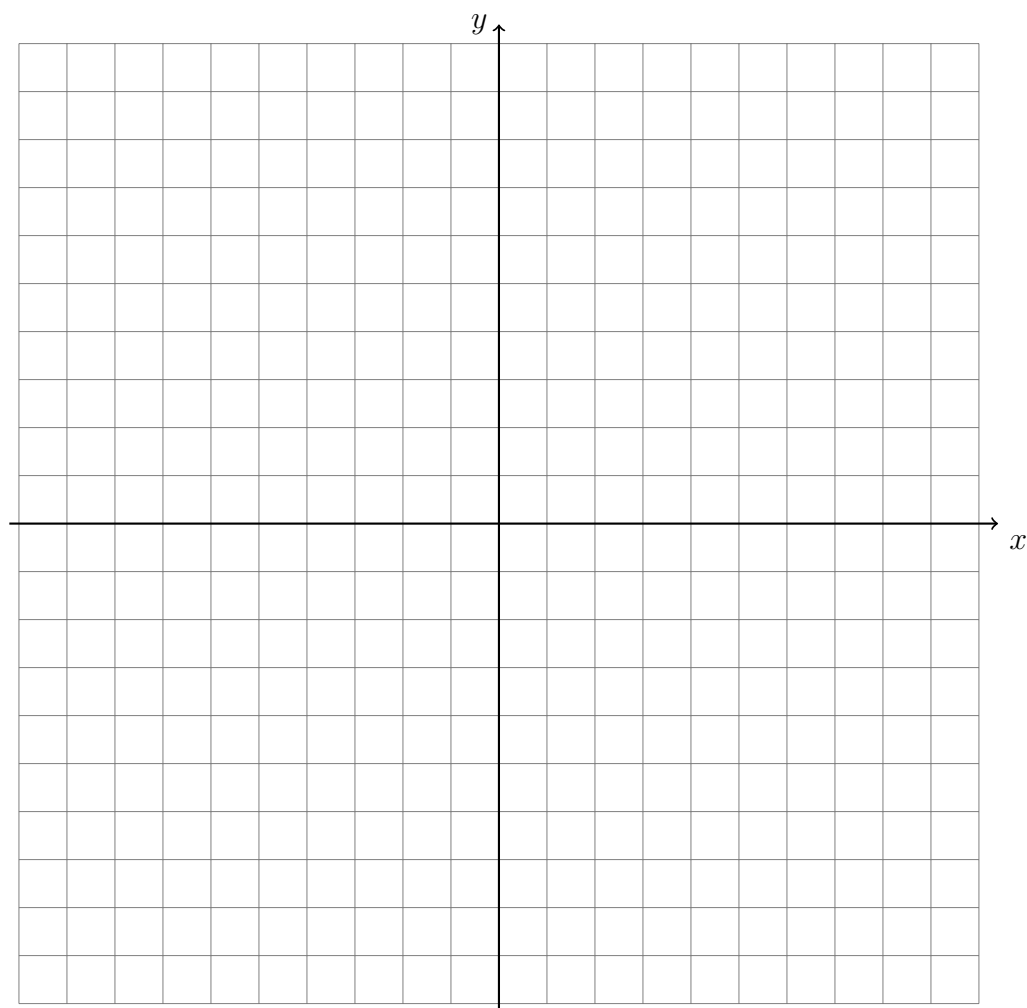3. Graph the two inequalities after filling in the values in the blanks.

$y \geq -3x + 1$

    (a) y-intercept $b =$ _____

    (b) Slope $m =$ _____

$y < -\frac{3}{2}x - 2$

    (a) y-intercept $b =$ _____

    (b) Slope $m =$ _____

Rate of change

4. Find the slope of the function from the ratio of the line differences.

(a)

x	$f(x)$
-2	-2
-1	0
0	2
1	4
2	6

(b)

x	$f(x)$
-4	9
-2	6
0	3
2	0
4	-3

Change in y = _____

Change in x = _____

Slope m = _____

Change in y = _____

Change in x = _____

Slope m = _____

5. Find the slope of the function. If the rate of change is not constant, write, "Non-linear. The rate of change is not constant."

(a)

x	$f(x)$
-3	0
-1	-2
0	-3
1	-4
3	-6

(b)

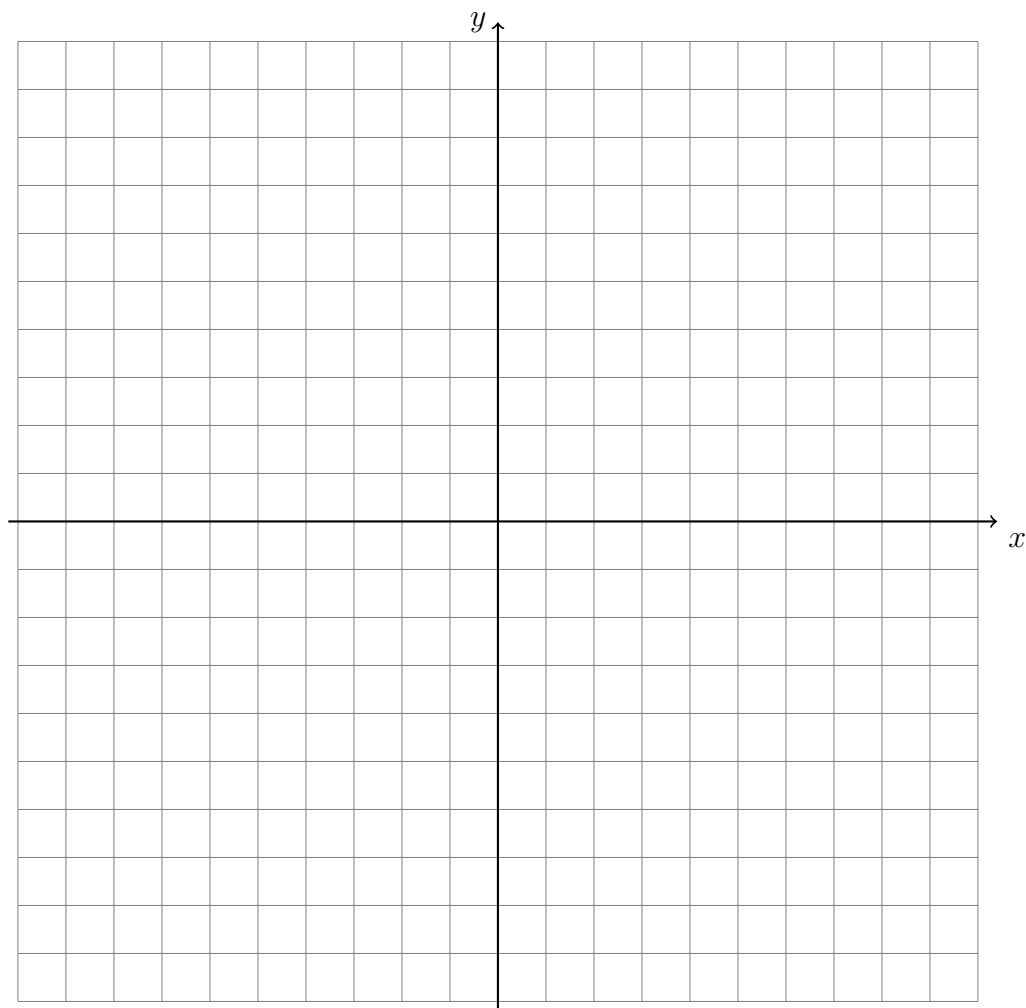| x	$f(x)$
-4	7
-2	5
0	3
2	5
4	7

Slope m = _____

Slope m = _____

Graphing quadratic functions

6. Given the quadratic function $f(x) = x^2 - 2$, find the row differences.

x	$f(x)$
-3	7
-2	2
-1	-1
0	-2
1	-1
2	2
3	7

Graph the function as a line over the domain $-3 \leq x \leq 3$.

Homework: Graphing systems of equations

1. Graph the two lines after filling in the values in the blanks.

$y > x - 3$ $\qquad\qquad\qquad\qquad\qquad\qquad$ $y \leq -\frac{1}{2}x + 6$
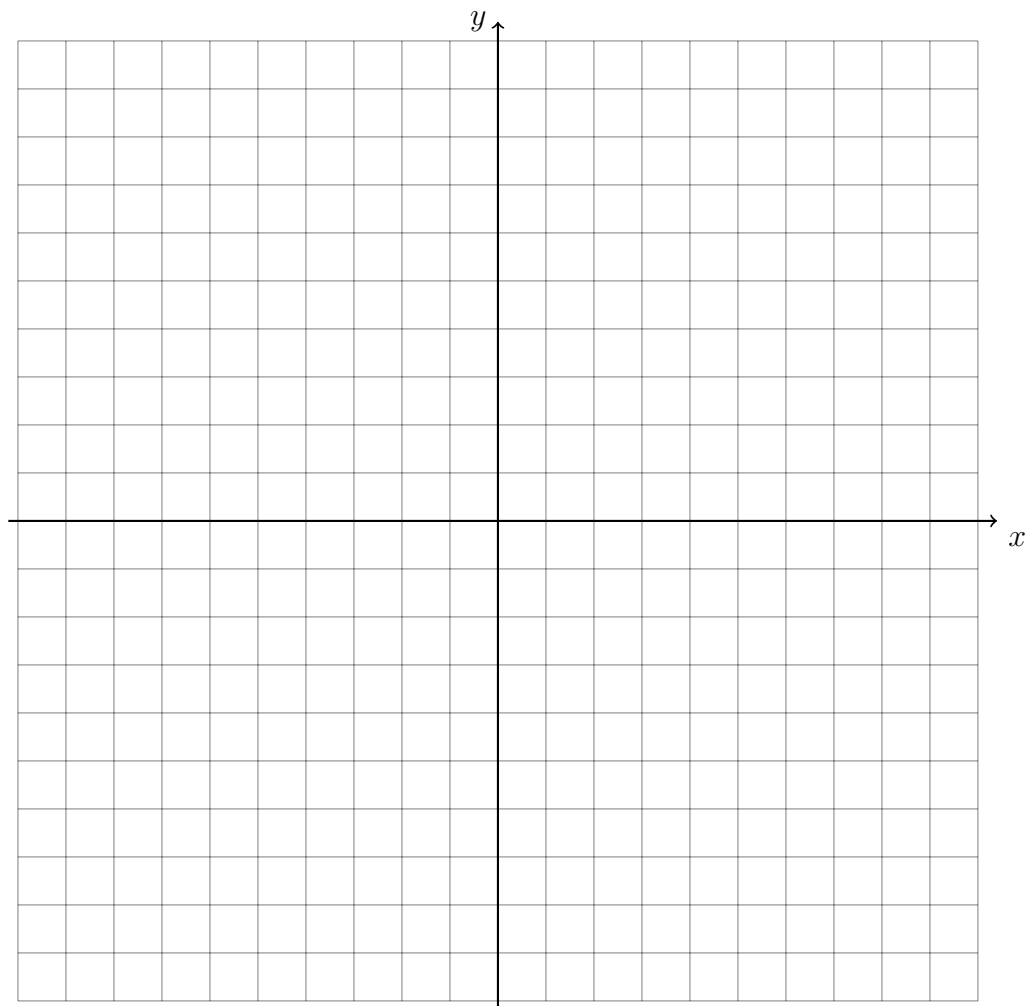
   (a) y-intercept $b = $ _____ $\qquad\qquad$ (a) y-intercept $b = $ _____

   (b) Slope $\quad m = $ _____ $\qquad\qquad\quad$ (b) Slope $\quad m = $ _____

Label both lines and the solution to the system with a capital "S". (3 points) Use pencil for graph (1 point)

Classwork: Happy New Year!
Due at the end of the period.

Fill in the values in the blanks and circling the correct types.
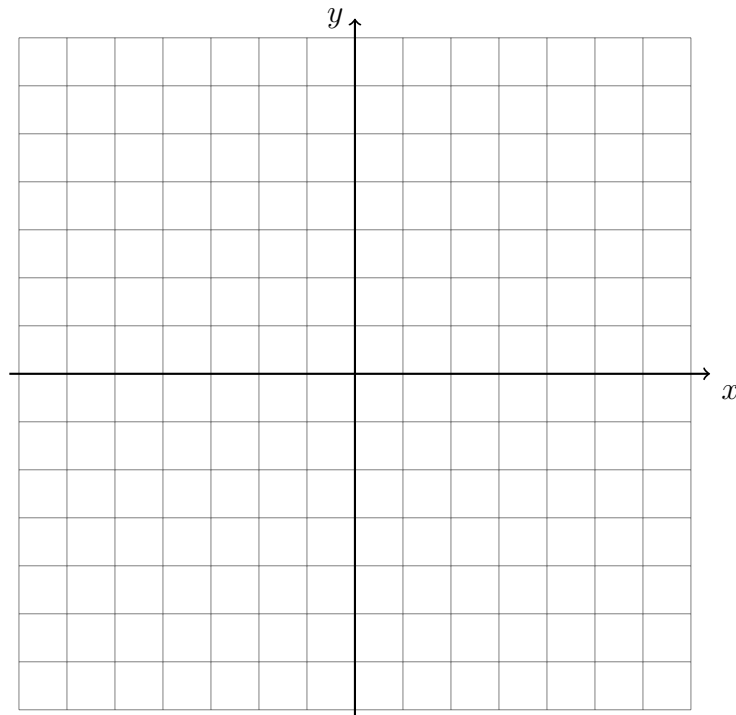
1. $y \leq \dfrac{2}{3}x + 1$

    y-intercept $b =$ _____   Line: Solid $(=)$ Dashed $(\neq)$

    Slope $m =$ _____   Shading: Above $(y >)$ Below $(y <)$

    Graph the inequality (use a pencil and straight edge - 1 point)

2. Solve for y, then complete. $x + 2y > 3$

    y-intercept $b =$ _____   Line: Solid $(=)$ Dashed $(\neq)$

    Slope $m =$ _____   Shading: Above $(y >)$ Below $(y <)$

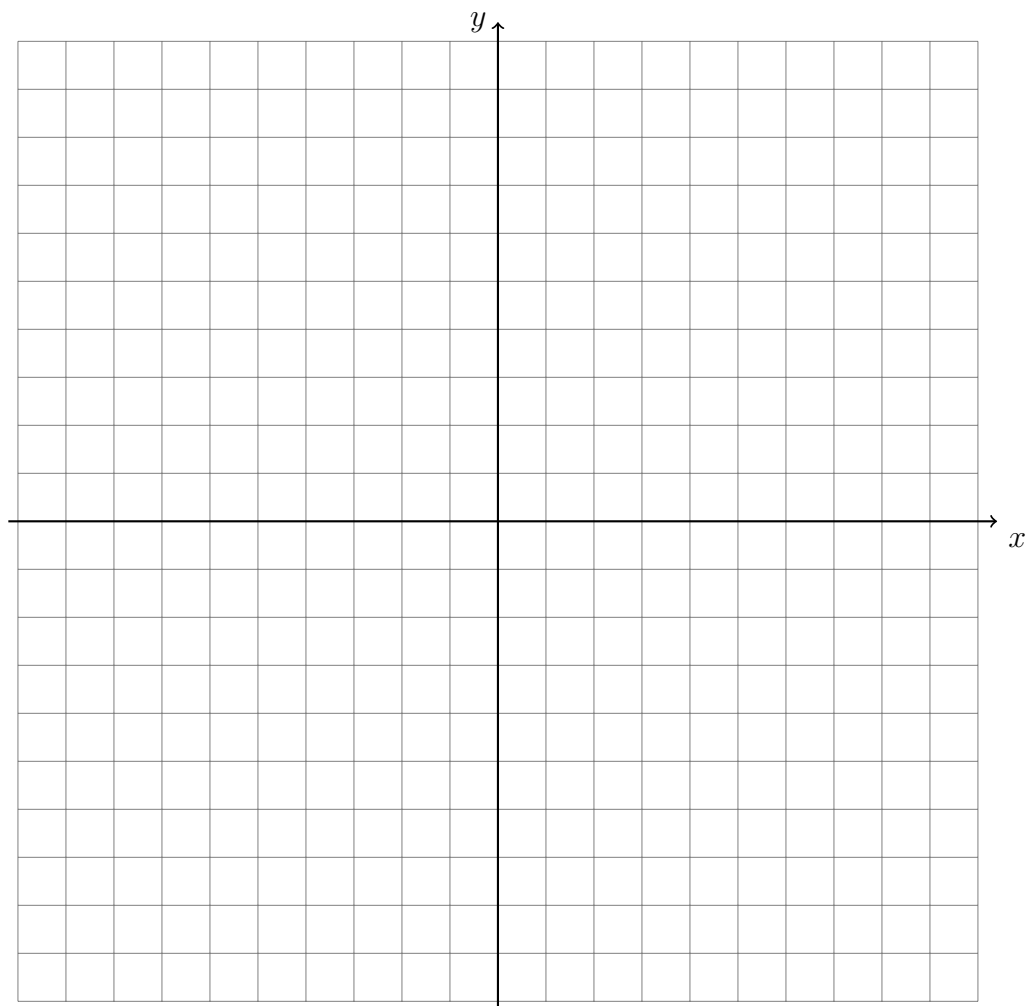3. Graph the two lines after filling in the values in the blanks.

$y = 2x - 3$ $\qquad\qquad\qquad\qquad\qquad$ $y = -\frac{1}{3}x + 4$

   (a) y-intercept $b = $ _____ $\qquad\qquad$ (a) y-intercept $b = $ _____

   (b) Slope $\quad m = $ _____ $\qquad\qquad\qquad$ (b) Slope $\quad m = $ _____

Label both lines and the solution to the system, the intersection, as a coordinate pair.
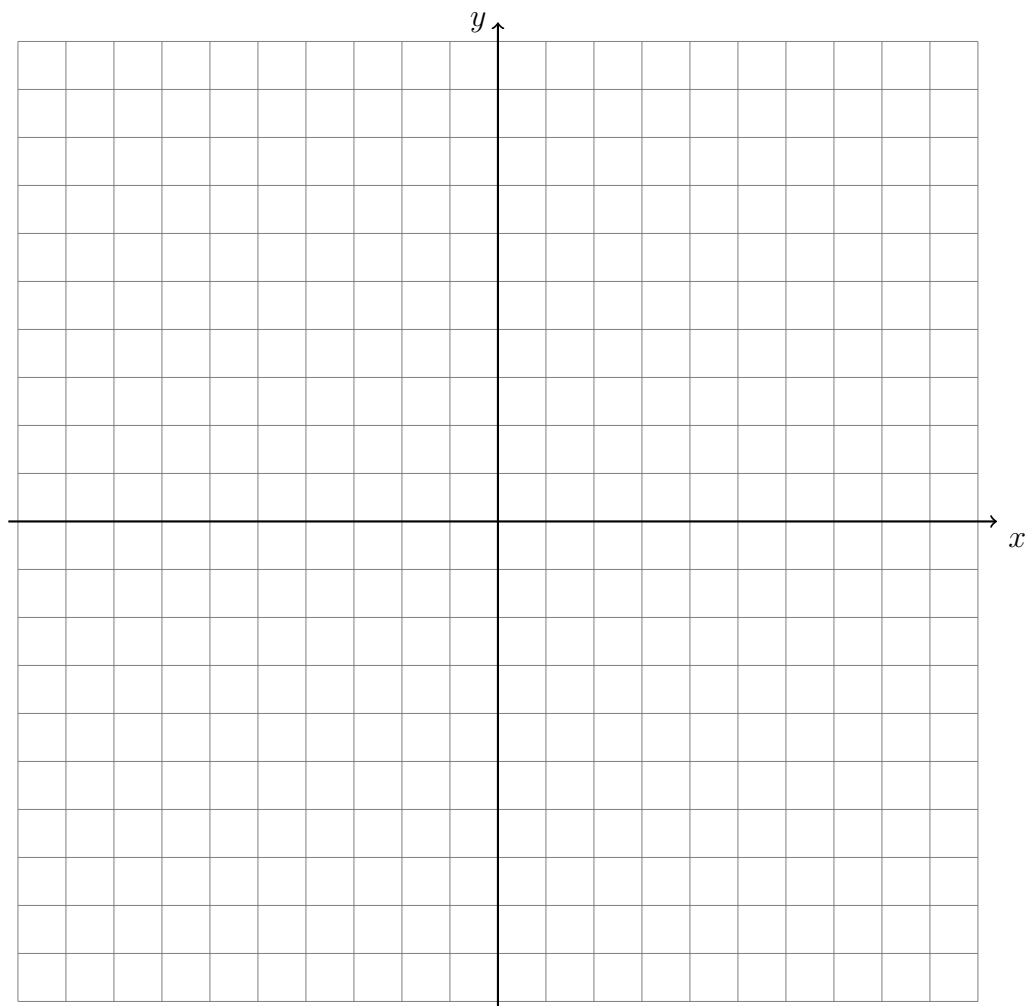(3 points) Use pencil for graph (1 point)

Graphing quadratic functions

4. Given the quadratic function $f(x) = x^2 - 3$, find the row differences.

x	$f(x)$
-3	6
-2	1
-1	-2
0	-3
1	-2
2	1
3	6

Graph the function as a line over the domain $-3 \leq x \leq 3$.

5. Graph the two lines after filling in the values in the blanks.

$y = x - 3$ $x + y = 1$

   (a) y-intercept $b =$ —————   (a) y-intercept $b =$ —————

   (b) Slope $m =$ —————   (b) Slope $m =$ —————

Label both lines and the solution to the system, the intersection, as a coordinate pair.
(3 points) Use pencil for graph (1 point)